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MINISTRY OF HEALTH AND FAMILY WELFARE

D.G.H.S. SCHOLARSHIP SCHEME (1988-89)

Applications are invited under the D.G.H.S. Scholarship Scheme of the Government of India, from students of Indian Nationality who are pursuing their POST-MBBS B.D.S. M.Sc. (Ph.D.) Courses in case of non-medical students in human sciences. Only those students, who have already secured admission and got themselves registered with the University concerned in the following subjects, are eligible to apply for the award of Scholarship under the scheme :

POST-MBBS/B.D.S. M.Sc. (i.e. Ph.D. Courses in case of non-medical)

Anaesthesiology

Dermatology and Venerology

Haematology/Blood Banking

Radiology

T.B. & Respiratory Diseases

(D.T.C.D. and M.D.)

Dental subject M.D.S.

Preventive and Social Medicine

Public Health

Hospital Administration, including

Medical Records

Psychiatry

Pathology

Community Health

*Anatomy

*Bio-Chemistry, Bio-Physics

*Criminology & Forensic
 Medicine

*Pharmacology

*Physiology

*Microbiology Bacteriology

(*In these students non-medical (Ph.D. Students
  also will be considered)

POST DOCTORAL COURSES : Endocrinology, Paediatric Surgery, Genetic Surgery

Non-Medical students of all the Institutions including the Central Institutions and Medical students of only those Institutions where Residency Scheme has not been introduced would be eligible for the award of scholarship under the scheme. Students getting scholarship under any other scheme or drawing pay, will not be eligible for the scholarship money under this scheme.

The amount of Scholarship is Rs. 850 - p.m. for POST-MBBS BDS M.Sc. (i.e. Ph.D. Courses in case of non-medical students) and Rs. 1000 - p.m. for post-doctoral courses. The Scholarship money is payable from 1-4-1988 or from the date of joining the course, whichever is later.

Out of the total scholarships awarded under the scheme 15% are reserved for Scheduled Caste and 5% for Scheduled Tribes. In case suitable candidates of these categories are not available the scholarship will be treated as dereserved and allotted to other suitable candidates.

Application Forms for the scholarship under the scheme may be obtained direct from the Directorate General of Health Services, MEDICAL (F&S) Section, Room No. 649, A Wing, Nirman Bhavan, New Delhi-11 upto 6-9-1988. Application duly completed in all respects should reach the Directorate General of Health Services, MEDICAL (F&S) SECTION on or before 7-10-1988. No request for application form will be entertained after 6-9-1988, and the application received after the last date is over (i.e. 7-10-88) will not be considered.

Selected candidates will be required to execute a bond as prescribed by the Government of India, Ministry of Health & Family Welfare. The Scholarship money will be available only for the duration of the course but in any case it will not be for more than two years. The Scholarship will not be paid for the duration of the House-Job, if any but will be paid from the actual date of joining the Post-Graduate degree diploma Courses.

Selection of candidates for the award of scholarship will be made by the Central Selection Committee appointed by the Government of India and its decision will be final and no correspondence will be entertained in this regard.

IN THIS ISSUE

UGC and the Networking of University Libraries

Ishrat Ali Qureshi*

The development of university libraries in India owes much to the efforts of the University Grants Commission (UGC). During the colonial rule their development attracted little attention and they were considered as conventional but more or less useless accessories. The importance attached to them may be gauged from the fact that in the case of the premier universities of the country—Bombay, Calcutta, Madras and Allahabad—the libraries could come into existence after as long a period as ranging from 17 to 29 years from the establishment of these Universities. The Indian Universities Commission (1902) was very critical of the pathetic state of affairs in the university libraries of the country.

Role of the UGC

Right from its inception in 1951 the UGC has been fully alive to the need of improving library facilities in universities. Within a few years of its establishment, it appointed a Library Committee (1957) under the Chairmanship of S.R. Ranganathan to review the working of university libraries and to make recommendations about their development. The recommendations of the Committee, covering almost all aspects of the working and planned growth of academic libraries, were accepted by the Commission as guidelines for its future programme of action. The framework of the Commission's planning envisaged the development of all the three important components of the library—building, books and staff.

Till 1950s the biggest problem of Indian university libraries was that of accommodation. Many of the universities did not have a separate library building and those which had one, were complaining of an acute shortage of space. The Commission, therefore, took up this problem on a priority basis and provided funds to the tune of about Rs. 2.87 crores to 65 universities in the first three plans for the construction of new library buildings or for the expansion of the existing ones. However, the improper planning of buildings, without taking into account the future growth rate and the services expected of a university library, has again posed a serious problem of space for the libraries of many of the universities. The ratio of seats to students varies from 1 : 12 at Jadavpur to 1 : 70 at Lucknow. The UGC Library Committee (1957) had recommended a ratio of 1 : 5. The UGC itself reported as far back as 1968 that "the library buildings put up with the Commission's assistance are, however, proving to be inadequate to meet the needs of the growing student population in the country and the special requirements of the postgraduate and research students."

With a view to improving the quality of teaching and research in universities, the UGC gave highest priority to the development of library collections from the very beginning. During the first three plan periods and in 1966-67 and 1967-68 the Commission made available funds totall-

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ing Rs. 4.12 crores to university libraries for the purchase of books and periodicals. From 1969-70 to 1983-84 the Commission's financial assistance for the purpose worked out to Rs. 16.17 crores. As a result of these liberal grants the number of university libraries with a collection of upto one lakh volumes increased from 5 in 1961-62 to 64 in 1983-84, that between one to five lakh volumes from 27 to 67 and that above five lakh volumes rose from 5 to 9 during the same period.

The UGC also paid due attention to improve the quality of library personnel in universities. In accordance with the recommendations of the UGC Library Committee, the Commission accorded academic status to the Senior library staff (Librarian, Deputy Librarian and Asstt. Librarian) and placed them in the corresponding scales of pay of the three segments of the teaching staff (Professor, Reader and Lecturer) from January, 1961. The parity between the salary scales of the teaching staff and the library staff, which continued undisturbed till 1972 was, however, eroded from January, 1973 when fresh revision of scales of pay by the UGC was made applicable only to the university teachers and not to the librarians. It took quite a few years for this wrong to be corrected. The parity was restored by the Commission only from April, 1980. The Commission also approved the application of the Merit Promotion Scheme to the library staff from January, 1983. While extending the privileges and material benefits of the teaching community to library personnel, the Commission now insists that they should also possess qualifications comparable to those of university Professors, Readers and Lecturers.

Haphazard Growth

Despite commendable efforts by the UGC to improve library facilities in universities, the development of university libraries in the country has not followed a uniform pattern. This accounts for wide variations in their policies, organisational and administrative structures, collections, services, standards, manpower resources, physical facilities, etc. The current scenario of university libraries presents a picture of haphazard growth.

The reasons for this unhappy state of affairs are : First, the post-Independence era is characterised by a great upsurge in the field of higher education. The period from 1948 to 1970 witnessed a deluge of new universities and colleges. While there were only 20

Universities in the country on the eve of Independence, the number rose to 29 by 1950, 47 by 1960 and 85 by 1970. At present there are over 170 universities and university level institutions. With the proliferation of universities the libraries also came into existence, but in most cases without the provision of basic infrastructure. Further, while the library was established its growth seldom received the attention it really deserved. The result is that in a large number of cases the development of the library has not kept pace with the expansion of the institution.

Second, in the absence of a national policy framework the development of university libraries continued and still continues to be asymmetrical and awry. The UGC Library Committee (1957) was an adhoc body and hence it wound up after submitting its report. No efforts were made thereafter to create a high level policy making body to advise the UGC on a continuing basis about future development of university libraries. The Commission on its own also did not initiate any action to coordinate the policies, functioning, services and acquisition programmes of these libraries.

Third, no recognised norms have been followed in financing the university libraries. The University Education Commission (1948-49) had recommended that about 6.25% of the university budget would be a reasonable expenditure on libraries. The Education Commission (1964-66) suggested that this could vary from 6.5% to 10%. This standard has been beyond the reach of almost all the University libraries in the country. In its report on "Development of Library facilities in Universities and Colleges" (1968) the Commission admitted that it was not in a position to provide funds at this rate. The result is that although the total expenditure on books and periodicals has increased substantially, the percentage of library expenditure to the total institutional budget is showing a declining trend. Coming down from 4.04% in 1960-61, it now ranges between 2 to 4% in an overwhelming majority of cases. Owing to escalating personnel budget and rising maintenance and administrative costs under inflationary pressures of the economy, the percentage of expenditure on books and periodicals to the total budget of the library is also going down steadily. Further, the unabated hike in the cost of reading material squeezes the book budget and reduces its real purchasing power compelling many university libraries to reduce their annual intake of books and prune the subscribed lists of periodicals.

Fourth, the indifference, rather apathy, of the professional librarians to the application of the principles of scientific management to library administration has also contributed to the present morass of university libraries in India. A modern university library is a huge and complex organisation. Its growing complexities and problems call for the application of modern scientific principles of management. A study of its various operations and processes by management experts and the use of new management techniques can bring about a lot of improvement in its functioning and at the same time reduce operational costs. A recourse to the latest techniques and methods of scientific management by the Indian University libraries can avoid the present enormous waste of their resources in men and material, improve their functioning and ease, to some extent at least, the financial difficulties they are confronted with currently.

Network of University Libraries

Owing to the above factors the University libraries in India are under a great pressure today. Their predicament is that while they are erratically planned, under-developed and traditionally managed, they are faced with serious challenges of an unprecedented nature and magnitude at the turn of the century. The explosion of knowledge in the present age, the emergence of new disciplines at a very rapid pace, the exponential volume of published output, the fast growing magnitude of literature in non-traditional microforms, the tremendous increase in university enrolment, the substantial rise in the number of faculty members, the ever-increasing number of new departments of studies, the institution of new courses and the expansion of existing ones year after year, the intensification of research activity, the inter-disciplinary character of present day research, the diverse needs of undergraduates, postgraduates and researchers, the unabated steep rise in the prices of books and periodicals, the continued spiral in the cost of other inputs—have all created problems of an alarming nature for university libraries and generated new demands for library services. These formidable problems cannot be tackled effectively by and, to be more precise, are beyond the resources of individual libraries. The situation calls for concentrated joint action by all the university libraries, rather by all the libraries of the country—National, public, special, etc.

In the context of the present scenario of Indian university libraries it is gratifying to learn that the UGC is giving serious thought to the creation of a network of these libraries. The Commission has recently appointed a Committee on National Network System for University Libraries (NNSUL) under the Chairmanship of its Chairman to suggest a mechanism by which the library facilities in different universities/institutions could be shared and utilised at an optimal level. The above Committee at its meeting held on 22.4.88 has constituted a working group to prepare a detailed project report on NNSUL. The Working Group has been asked "to identify the present bottlenecks in the library system and to suggest an effective mechanism by which a networking system could be evolved taking into account the physical infrastructure and manpower presently available in university libraries".

Bottlenecks & Suggestions

The approach of the Commission to identify first the present bottlenecks in the library system before evolving a network of university libraries is a right one. It is vitally important that the causes of lopsided and morbid growth should be properly diagnosed first; only then the cure can be suggested and worked for. The maladies that have afflicted the university libraries are under development, on the one hand, and malfunctioning, on the other. At present there is a lot of waste of material and personnel resources which needs to be avoided in order to improve their working. For planned growth to be result oriented and for additional investment to be adequately rewarding, it is imperative that not only the errors of ill-conceived planning be corrected, but the causes of malfunctioning be also removed.

The problems confronting the university libraries today, which have originated both from faulty planning and administrative malfunctioning, have already been outlined above. In this connection the following suggestions are offered for the consideration of the UGC.

1. Formulation of a national policy for the planned and systematic growth of university libraries in the country, consistent with the National Policy of Education (1986) and the Programme of Action, as approved by the Parliament in August, 1986, is a matter of highest priority. In framing the said policy three agencies will be involved : (i) Ministry of Human Resource Development, (ii) the Planning Commission, and (iii) the University Grants Commission. It is, therefore, suggested that the UGC appoint a committee consisting of representatives from the said three

agencies and two or three senior University Librarians. The terms of reference of the proposed committee may, inter alia, include a review of the development of Indian university libraries from the 1960s onwards, enunciation of a national policy about their objectives, functioning and planned growth, a thorough examination of the administrative and financial problems confronting them, inter-library lending and resource sharing, cooperative cataloguing, automation of library operations, application of modern management techniques, etc. It can reasonably be expected that the recommendations of such a committee will go a long way in improving the working of Indian university libraries and in ensuring their proper future development conducive to the needs of higher education in the country.

2. The root cause of under-development of Indian university libraries is that their budgets do not conform to any recognised standard. The UGC should urge upon the universities the need of spending a minimum of 6% of their total budget on library facilities as recommended by the University Education Commission (1964-66). In the case of newly established universities the percentage may vary from 6 to 10% depending on the level of development of each university library.

3. The Commission and the State Governments should decide from time to time the proportion in which they would share financial assistance to State university libraries for their development.

4. In the case of the library of a new university, adequate infrastructure in the form of building, equipment, furniture, etc. should be provided by the UGC and State Governments through capital grants keeping in view the future growth needs of the library. Further, special grants should be sanctioned to enable it to build up a core collection of standard works in different disciplines.

5. The Commission should not approve any proposal for the establishment of a new department or the institution of a new course of study, speciality or research project unless the proposal contains full financial implications for library facilities in this behalf.

6. In the context of the exponential growth of published output and the inability of any university library to purchase more than a small fraction of this enormous volume because of its scarce financial resources and unabated price spiral, the need of

observing strictly the rules of financial discipline and of avoiding wasteful expenditure can hardly be over-emphasised. Optimal utilisation of limited funds through a judicious programme of spending calls for (i) careful book selection based on book reviews in learned periodicals or book reviewing journals, (ii) spreading the book acquisition programme evenly throughout the year and avoiding frantic efforts to utilise book grants at the fag end of the financial year (which only result in the procurement of trash and sub-standard books), (iii) avoiding duplication of titles as far as possible in order to add a larger number of new books, and (iv) making purchases on the most competitive terms with a view to ensuring the best possible utilisation of funds. The UGC should impress upon the universities the necessity of observing these and similar other guidelines to improve their economy through financial discipline.

7. Libraries like most social service organisations are labour intensive and do not possess a self-generating economy. Since they continue to face spiralling costs of all the inputs with stable or marginally increasing budgets, it is absolutely necessary that they should try to make the most effective use of their available resources. Application of the modern techniques of management will surely improve the level of efficiency and reduce operational costs in any university library. Management control studies about library operations should, therefore, be conducted in order to simplify procedures and accelerate the pace of work.

8. The UGC may either establish a Library Management Research Unit or sponsor management studies to carry out large scale investigations into problems of library management including systems analysis, budgetary techniques, survey of library users habits, inter-library comparisons, etc. The results of such studies should be communicated to university libraries in order to enable them to bring about necessary improvement in their management.

9. The world over the average recurring expenditure of a library on items other than staff (books and periodicals, building, contingencies, etc.) is equal to that on staff salaries. This ratio has been considered appropriate by a number of library experts and committees such as the UGC Library Committee of India and U.K. (1957; 1967) the Advisory Committee for Libraries (1957), etc. A developing country like India cannot afford to allocate more than 50% of the library budget to personnel costs. However, studies about some of the Indian university libraries have

revealed that the expenditure on staff salaries in their case is as high as 60 to 65%. The UGC should see to it that no university library ordinarily spends more than 50% of its total budget on the pay bill of its staff. The university libraries should be advised to keep, without adversely affecting the provision of services needed by the academic community, the cost of establishment at the minimum so that a larger percentage of the budget could be spent on enlarging the collections of the library.

10. Manpower planning is of crucial importance in university libraries which have their budgets growing in a very disproportionate ratio to the spiralling costs of all the inputs. The introduction of new technology into libraries is creating a situation that demands a thorough review of the personnel system. Will the same number of staff be needed with new technology and what types of skills and abilities will be necessary ? The staff formula suggested by the UGC Library Committee (1957), which could hitherto serve only as a general guide and not as a standard prescription to be applied universally, now urgently calls for a thorough review because of the enormous changes that have since taken place.

Since budget constraints have become a way of life, the UGC should sponsor programmes to improve the existing manpower qualitatively in university libraries through in-service training, coaching and guidance, workshops and other orientation programmes. The engagement of subject specialists has now become essential in university libraries in this Information Age. Since the Indian university libraries cannot afford to employ subject specialists because of their poor finances, it is imperative for them to develop subject expertise in different areas within their available personnel resources.

Network Planning for Indian University Libraries

Networking of Indian university libraries is to be planned very carefully in the context of the present state of their under-development and lopsided development. The level of the application of computer technology in other libraries of the country and the technical expertise and infrastructure available at home are to be taken into consideration. For creating a network all the university libraries and other institutions of higher learning or the selected ones, to begin with, are to be computerised first and then inter-linked through a suitable telecommunication system. A decision with regard to the topology of the network (star network, fully inter-connected network or a ring network) is to be taken at the planning stage.

Objectives of the Network

The plan for networking should very clearly envisage the immediate as well as long term objectives of the system. Formulation of the objectives of the network will depend in a large measure on the extent of application of computer technology to house keeping operations by individual members. Libraries can use the computer for various operations and services such as acquisition control, cataloguing, circulation control, serials controls, reference service, bibliographical service, indexing and abstracting, financial control, administrative work, decision-making, etc. The contemplated networking of Indian university libraries may be done with the following objectives in view which, of course, will be achieved only gradually with the evolutionary growth of the system :

(1) Cooperative Acquisition : Resource sharing is the cornerstone of any network of libraries. No library in the world, however, financially well off and resourceful, can claim self-sufficiency to meet all the demands of its clientele. It will be preposterous to presume that a library will have *ad libitum* funds to purchase every printed document. The exponential growth of knowledge resulting in the out-pouring of the printed word and unabated rise in the cost of reading material of all formats has obliged the libraries to cooperate with each other in facing this challenging situation. The libraries of the network may, therefore, agree on cooperative acquisition and decide by mutual consent the subject areas in which each will endeavour for comprehensive coverage of the literature. Such an arrangement will obviously ensure optimal utilisation of the scarce financial resources of each constituent and result in a much larger coverage of the currently published output with the total resources of all the constituents that will be possible otherwise. The allocation of subjects may be made on the basis of the existing strength of collections of individual libraries in particular disciplines, languages or other areas of study as well as on the volume and quality of their research output in those fields. Universities which have for historical reasons specialised in certain fields or developed centres of advanced study in specific subject areas would obviously be a better choice for being assigned the responsibility of intensive collection development in those areas.

(2) Shared Cataloguing: necessary mechanism may be worked out by the participating libraries in this behalf in order to reduce the cost of cataloguing;

(3) Serials control;

(4) Union listing—production of computerised union catalogues of periodicals. serials, specials, collections, etc.

(5) Access to data base of the network for on-line information retrieval;

(6) Training and continuing education in information technology;

(7) Consultancy services in library automation and related fields;

(8) Direct provision of certain computerised services—indexes, abstracts, etc.

(9) Transmission of microfascimile copies of the required pages or documents, charts, figures. graphs, drawings, etc. by using computer terminals attached to the data bases of the network with printing facility;

(10) Facilities for access to a major bibliographic utility's services and products, e.g.. DIALOG;

(11) Technical assistance and services in the use of various brokered services;

(12) Facilities for access to major national data bases;

(13) Coordination of expensive purchases and co-operation in conservation and preservation of holdings;

(14) Serving as an important component of the planned National Information System for Science and Technology (NISSAT); and

(15) Establishing close links with important national institutions and organisations and participating through them in the world science information systems of the various branches of science and technology, e.g.. INIS, AGRIS, ASTINFO. etc. At present BARC and ICAR are functioning as national input centres for INIS and AGRIS respectively.

The above statement of objectives contains both short term and long term objectives. but is by no means an exhaustive one. Others may be added to it according to the needs of changing times. Objectives 10-15 may be categorised as long term objectives and can be attained only when the pro-

posed network has gained stability and grown into maturity,

Structure of the Network

The network may be conceived as a multi-tier system and may have the following levels with a data base at each level :

(1) *Institutional*: The university or institution having a number of decentralised libraries (e.g.. Delhi University) or a system of departmental libraries (Aligarh Muslim University) may have an internal network for various purposes.

(2) *Consortium*: A group of institutions, usually geographically close. may be integrated into a network for shared acquisitions, circulation, inter-library loan, larger bibliographic access, cooperative cataloguing, etc.

(3) *Regional*: The university libraries and libraries of other institutions of a particular region of the country may join together to create a network for sharing their resources in various library spheres.

(4) *Subject Oriented*: The institutional libraries in a particular field of knowledge, e.g.. Medicine, Agriculture, Engineering and Technology may be linked together to constitute a network for achieving the desired objectives.

(5) *Linguistic*: India being a multi-lingual country, it is essential that networks of university and institutional libraries should also be evolved on linguistic basis for exhaustive coverage of various disciplines in all the Indian languages listed in the Constitution Creation of such computerised networks would, however. be possible only when software in various Indian languages is available.

(6) *National*: Networks at all sub-levels should be integrated to form a comprehensive National Network of University Institutional Libraries with a much larger scope of objectives than that of any subsidiary network. The National Network will *inter alia* plan. direct and coordinate the activities of the networks at all other levels of the system. It will also maintain its links with other important national and international networks.

Infrastructure for the Network

The creation of the proposed network will need the following infrastructure :

(1) *Computer Hardware :* All the libraries joining the network will require computer hardware to automate their important house keeping operations. If some of the university/institutional libraries already have mini or micro-computers or their parent institutions possess large frame computers, the problem of hardware in their case will be of a different nature. In such cases supplementary efforts to augment the existing computer facilities or to provide terminals for using the large frame computer might be required. However, the number of such libraries will be very few at present. In a large majority of cases the University libraries will have to be provided with hardware to enable them to join the network. The choice of the hardware, that would be most suitable for the purpose and also economical at the same time, will be an important decision at the planning stage.

(2) *Software :* It is necessary that all the constituents of the network should use the same system software to facilitate quick on-line interaction between each other and to ensure optimal functioning of the whole system. Use of different softwares by different libraries will obviously obstruct on-line information processing and retrieval and also create the problem of transforming several softwares into some standard software system at the national and regional levels. The CDS ISIS version of the UNESCO, which is a mini-micro-computer based, Computerised Documentation System, is very suitable for libraries and documentation centres. India being a signatory to the CDS ISIS licence agreement, it is available to Indian institutions and libraries free of charge.

(3) *Telecommunication System :* Telecommunication system is of vital importance for establishing a network of libraries and information centres by interconnecting computers located at various places. On-line information processing and retrieval is rendered possible only through the telecommunication channel. The constituents of a network may be linked with each other via the telecommunication circuit switching method or the packet switching method. Today links may also be provided in many other ways, e.g., by cable, terrestrial microwaves or via earth satellites.

(4) *Uniform Standards and Specifications :* For the effective, efficient and quick functioning of the network it is also necessary that all the libraries of the system agree on using uniform information storage

and retrieval standards—cataloguing code, indexing and abstracting standards, specifications for periodicals recording, etc. Use of variant practices by the constituents of the system will obviously obstruct on-line information processing. The UGC may form a committee of University Librarians and computer experts to make recommendations in this behalf. It would be better if ISO standards are adopted to facilitate exchange of information among different systems.

(5) *Technical Manpower:* The network must have adequate personnel qualified in information technology to plan, develop and run the whole system. However, at present there is a great dearth of such technical manpower in the country. This shortage can be met by getting the required number of library staff trained in computer application. Such a course of action will also be desirable in the context of the present financial problems of university libraries as it will not put additional strain on their already tight budgets. The UGC should, therefore, sponsor in right earnest programmes for intensive training of the library staff in information technology with the cooperation of such organisations and institutions as the INSDOC, DESIDOC, SSDC, DRTC, etc. With resource personnel drawn from suitable organisations and institutions, such training programmes can be easily arranged State-wise or region-wise in universities where computer facilities are presently available.

The establishment of the proposed network of university/institution libraries will clearly entail a heavy financial outlay. However, the investment will be worth making in view of the importance of 'Information' as a resource in national development in the present 'Information Age'. The proposed network will also form part of the comprehensive National Information Network which is so essentially needed today to accelerate the pace of research and development in the country.

With their budgets already over-strained, it will not be possible for universities to make any substantial investment from their own resources to computerise their libraries and to contribute towards the costs of the network. The scheme can be implemented only with liberal financial assistance from the UGC and the State Governments. Since education is a subject of shared responsibility between the Centre and the States, the UGC and the State

governments will have to come forward in a big way to reorient the university libraries and to provide necessary wherewithal for their technological transformation which has now become imperative. The libraries will have to be changed radically both in their contents and structure by the end of the century. The change is taking place rapidly in the West. The university libraries in India are yet to make a start in this direction. It is gratifying to note that the UGC, being the highest decision-making body in the field of higher education is fully alive to its responsibilities for bringing about the much needed technological transformation of Indian university libraries in order to prepare them for the challenges of the 21st century. It has so far played a very constructive role in their development. The latest bold move to create a network is ample evidence again of its capability to rise to the occasion. Let us hope that the efforts of the UGC for networking the University libraries will yield tangible results.

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DECISION MAKING

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Today's managers face a whole new era of challenges. Government, labour unions, consumers, stockholders, suppliers and a host of other groups are all of concern to today's managers. Many different demands are placed on the modern manager in satisfying these groups.

Today's manager must thus play the role of an innovator, a negotiator, a fireman, a motivator and a resource allocator in the decision-making process. The innovator role demands that the manager lead the organization into new products, new fields and new technologies. As a negotiator, the manager must bargain, compromise and harmonize various groups and factions. As a fireman, the modern manager must be alert to small disturbances and be decisive in eliminating them. Today's manager must be able to motivate others to action. The successful manager is decisive in allocating resources to competing projects and effective in setting timely priorities.

Thus, today's manager must supplement experience and intuition with more powerful tools and processes. Organized and systematic processes are necessary in order to cope with the demands of this new era. The structured decision process and its associated techniques and methods can be a potent tool, especially when combined with seasoned judgment.

Structured Decision Process

The structured decision process is a logical, systematic procedure for selecting actions that will achieve one's objectives. It consists of the following seven steps :

1. Problem definition.
2. Specification of the goals to be achieved and their relative importance.
3. Enumeration of the decision alternatives.
4. Evaluation of each alternative.
5. Selection of the optimum alternative or alternatives.
6. Post-optimal analysis.
7. Controlled implementation.

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Problem definition involves becoming fully aware of the existence of the problem and its larger context.

The specification of the goals and their relative importance establishes the desired state of affairs.

The enumeration of the decision alternatives establishes the various ways of achieving some or all of the goals.

The evaluation of the alternatives determines their relative benefits, regrets and costs.

In the post-optimal analysis, the optimum decision is tested to determine whether or not it is the best choice under a wide range of possible circumstances.

In the controlled implementation step the decision is carried out in such a way as to prevent any inadvertent consequences.

In practice, the application of the structured decision process is usually a very dynamic and heuristic experience. It may involve a substantial amount of human interaction. The seven steps often overlap and they may not be performed in sequence. The decision maker may return to an earlier step at several points in the process. There may be considerable recycling through all the seven steps before arriving at a final decision. Or, there may be some oscillation back and forth between the steps for some period of time. This does not mean that the structured decision process is not working. Rather, this is simply the nature of management decision problems and settings.

Management decision problems are usually so complex that they often don't become fully visible or understood until quite late in the structured decision process. Even then, the problem may not be equally perceived by all parties. This may pose considerable obstacles to a final decision. Evaluating alternatives, assessing the relative importance of goals and selecting the optimum alternative all involve personal value judgments. Individuals seldom have identical value systems. Thus, the results of these activities will often vary with the individual decision maker who performs them. The decision setting and environment can substantially influence the decision process and its output. Whether the decision maker is playing the role of an individual, a member of a group or an official in an organization will generally influence the decision behaviors motives and perceptions. Information availability and data collection problems often arise in applying the structured decision process.

There are few situations in which all the alternatives are known, and in which their effectiveness can be unequivocally determined. In the face of these uncertainties, some decision makers may be reluctant to make any decisions at all. Still others may be psychologically challenged to take the responsibilities for high-risk decisiveness.

Thus, the structured decision process must be thought of as a prescriptive guide. It cannot be rigidly applied to most management problems. And it certainly cannot be expected to make decisions for us. But it can be used to guide us through the often complex maze of real world decision-making. It is a systematic process that forces us to consider all the aspects in their proper order. It aids in sharpening decision-making skills and analyses. It can point out otherwise hidden aspects and enlarge our awareness of the total decision system.

Elements of Decision Making

Though decision processes usually differ with the nature of the problem, the situation and the individual decision-maker. Figure 1 presents a general picture of most decision processes. This model depicts decisions as being precipitated by the recognition of problems or opportunities. If the problem or opportunity is perceived as routine, the decision-maker may go immediately to the selection of the best alternative solution. If the problem of opportunity is familiar, then little time may be devoted to its definition. If the problem or opportunity is well-defined, then the search for alternative solutions or ways to take advantage of the opportunity may be brief. If the relative effectiveness of the alternatives is known, then very little time may be spent in analyzing and evaluating the alternatives and deliberating about the best one.
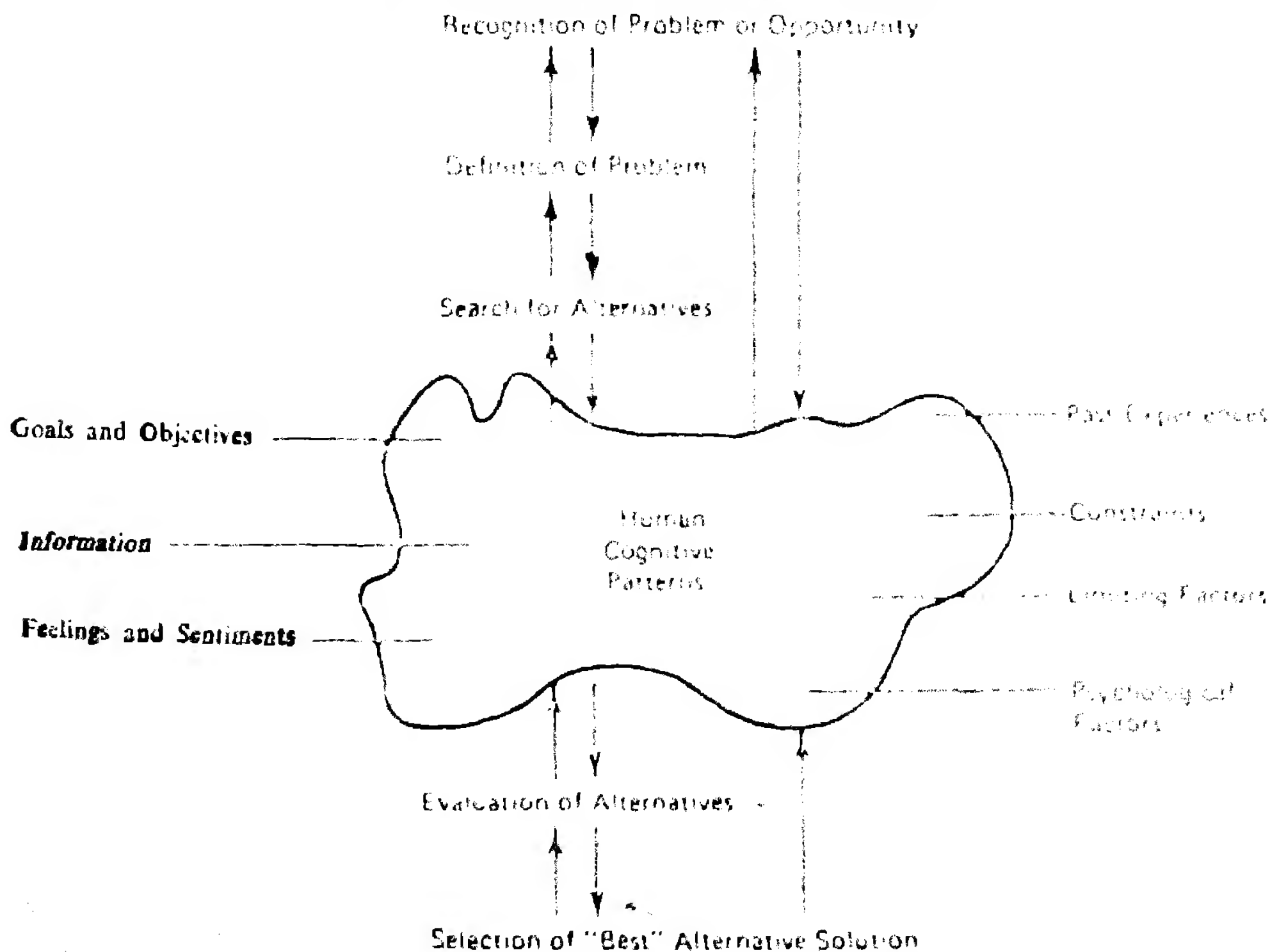
The Structured Decision Process

Fig. 1 : Elements of a decision making process

In terms of the Figure, the nature of the problem may influence whether or not the decision-maker moves through the process slowly or quickly. If the problem is a routine one that is solved by habit, then the decision-maker may jump from problem recognition to the selection of the best alternative solution. If the decision is one that has been pre-programmed, then the decision-maker may skip the problem definition and the search for alternatives. In a preprogrammed decision there are a finite number of alternatives with known effectiveness, and the decision-maker must match up the appropriate alternative with the problem stimulus. An example is deciding what clothes to wear in the morning. The problem stimuli include the weather and the planned daily activities. Sunny, warm weather and recreational activities require one kind of wardrobe, while other weather and other activities require different appropriate dress.

If the decision problem is complex or poorly understood then the decision process may be quite lengthy and deliberative. As Figure shows, there may be considerable recycling back and forth within the process. The search for alternatives may result in information that further clarifies the problem or suggests its redefinition. New alternatives may be discovered during the processes of evaluating and analyzing the original set of alternatives. The best alternative may not be apparent from the original set, and a new search for alternatives may be undertaken. Thus, the decision making process may be very heuristic and iterative in nature.

An Algorithm

Figure—2 presents an algorithm for the structured decision-making process. This algorithm describes the various steps that are performed within the structured decision-making process, and shows the relationships between them. This algorithm is a general one that applies to a variety of types of problems and situations.

A decision involves many intuitive and deep-seated cognitive mechanisms that cannot be observed or directly influenced. What can be influenced are the behaviour patterns, the analytical procedures and the sequences of logic that are followed in making a decision. These are the elements of the decision-making process.

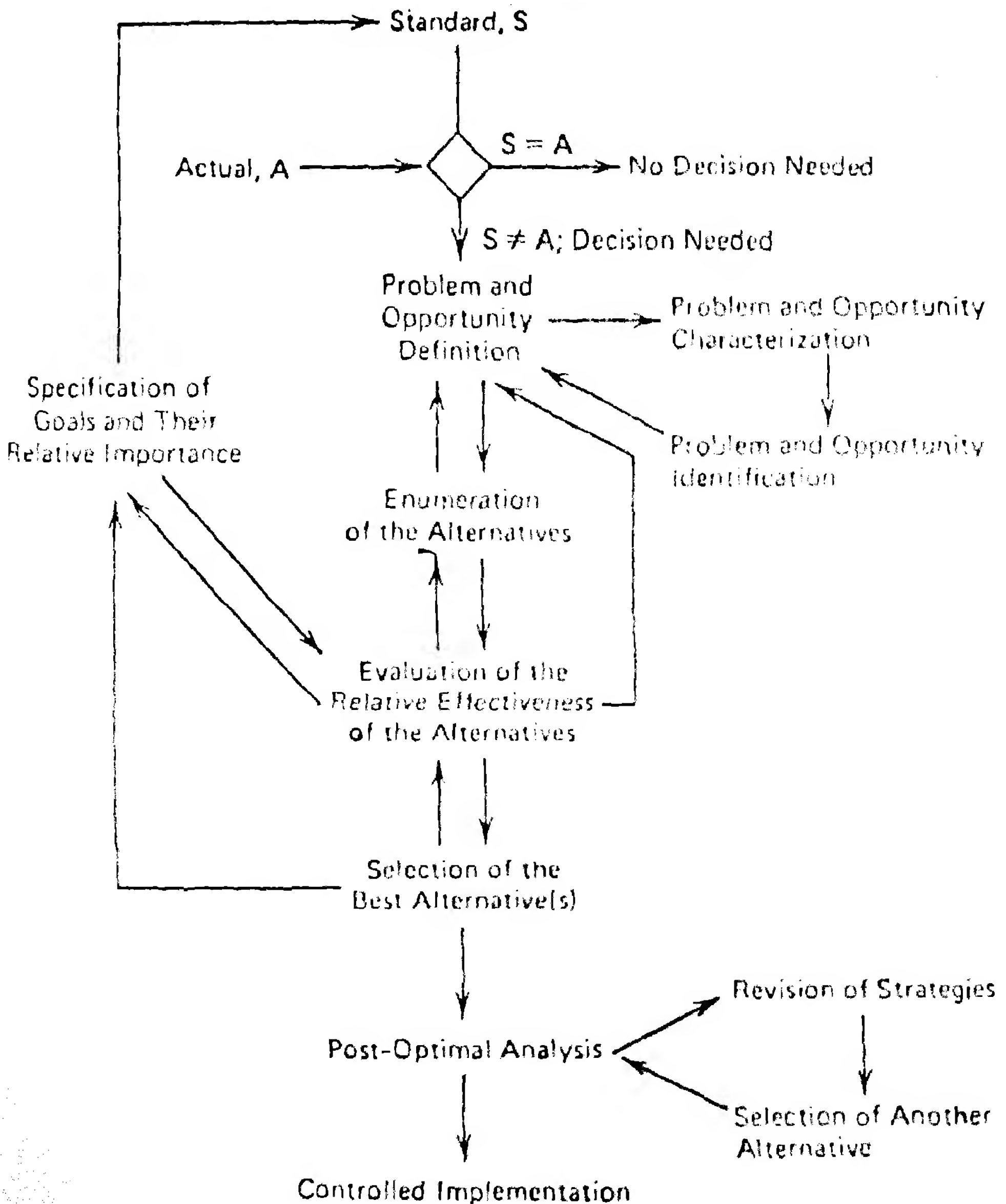The elements are often haphazard, unsystematic, inefficient and ineffective. Improvements may be sought through the application of the structured decision-making process. Improvements can be expected in the following eight areas. One, more timely sensing and recognition of emerging problems and opportunities. This will enable the decision-maker to have more time to devote to the problem and to take earlier actions. Two, a greater depth of comprehension and a more accurate identification of the real problems and opportunities. Thus, the chances of operating on false symptoms or solving the wrong problems will be reduced. Three, more logical and higher quality alternative decision choices and strategies. Since the quality of the final decision is limited by the quality of the available alternatives, improvements in the alternatives will translate directly into improvements in the final decision. Four, a detailed specification of the articulated goals and standards. This will bring the problem-solving activities close to the organizational or individual goals and the long range plans. Five, a comprehensive evaluation of the benefits, costs and regrets of each alternative. The resulting expanded information base will permit the decision-maker to exercise more enlightened judgments. Six, intuition, bargaining and political processes will be reduced in favour of more rigorous, systematic comparative analyses as the basis for selecting the overall best alternative. Seven, effective contingency plans and other preparations. Eight, through the use of behavioral techniques and group methods, the chances of implementation of the decision.

Individual Decision Settings

The settings can dramatically influence the nuture of the decision-making process and the resulting decision. In the individual setting, the individual's own personal values, perceptions and aspirations largely control the decision-making. The individual is free to act at will.

Economic, strategies, satisfying and behavioral approaches may be taken to decision-making in the individual setting. The economic approach presumes that the decision-maker has perfect information, and can compute the statistically best decision choice. Though these assumptions seldom hold in most real situations, the economic model contains many useful analytical techniques and some important lessons for the individual decision-maker. Indifference point and dominance analyses are very useful general techniques that can help clarify the decision maker's options. One of the important lessons is that a

The Structured Decision Process

Fig. 2 : Algorithm for the structured decision making process.

random choice of alternatives may be just as good as any other choice. The strategies approach sensitizes the individual decision-maker to the fact that particular decision choices reflect different risk-propensities and value-orientations. This approach permits the decision maker to select a blend of alternatives that achieves a desired livel of risk-reward trade-offs. The satisfying and behavioral models show how the individual's level of needs and aspirations can influence the search for better decision alternatives.

Each model is appropriate for handling different situations, and the most effective decision-maker recognizes when to use each one. In general, various elements and aspects of each model can be mixed together and used to provide a powerful combined approach.

Group and Organizational Decision Settings

In a group setting, individual actions may be constrained by a variety of interpersonal pressures and group dynamics. In an organizational setting, many complex forces may influence the decision-making. In addition to group phenomena, organizational settings exhibit intergroup interaction phenomena and formal subordinate-superior behavior patterns. Organizational settings are also characterized by diffuseness, splinteredness and information-sharing barriers that may block the decision flow. Thus, different approaches are needed in order to achieve an effective decision in these different settings.

Leadership failures, specious persuasion, bandwagon and snowballing effects, and the tendency for groups to break into small factions are major obstacles to effective group decision-making. Proper training and process management of decision-making groups is needed if these obstacles are to be overcome. Several process management methods are available for increasing the effectiveness of decision-making groups. These methods include the nominal-interacting (NI) decision-making format, techniques to ensure that the group cycles through the task and socio-emotional phases, and feedback methods that guide the accommodation and maturation of the group.

The opportunities for factions, coalitions, bargaining, power plays, and politics are greatly increased in organizational settings. An organization consists of many different overlapping groups that are held together by a mutuality of interest and a formal structure of superior-subordinate relationships. This mutuality of interest is often very tenuous. Each

group or formal department may have basically dissimilar goals and desires. The formalization of these groups into departments and divisions enhances a spirit of non-cooperation and separateness. The application of organizational joint problem solving methods, task force study committees and group process management methods can overcome some of these problems.

Group settings can benefit greatly from the application of the structured process. The structured process can help focus and channel the group behavior patterns, thought patterns and analyses. However, the structured process must be used in combination with group consensus and group management methods like the NI process, in order to handle group interaction and interpersonal dynamics phenomena. The organizational setting can similarly benefit from the application of the structured decision-making process. However, structured decision-making cannot be effectively used unless it is combined with organizational joint problem solving methods and task forces or other linking arrangements. These methods are needed to cope with the diffuseness, splinteredness and behavioral barriers that usually characterize organizational settings.

Defining Problems, Opportunities and Alternatives

No decision can be any better than the preparation that goes into it. The careful definition of problems, opportunities and alternatives is a critical aspect of this preparation. The exception principle, the deviation check and the management audit may be used to assist in problem definition. A pro-active posture of seeking out weaknesses and potential problems before they actually occur is the most effective approach for coping with today's rapidly changing society. A pro-active posture is absolutely necessary for the timely identification of emerging opportunities. Many environmental monitoring and technological forecasting techniques are available to help the decision-maker identify opportunities.

The generation of creative solution alternatives is especially important to effective decision-making. Insufficient emphasis is usually placed on generating a wide diversity of alternative solutions. The quality of the final decision can only be as good as the quality of the field of choices available. Several analytical techniques and creativity methods are available to assist the decision-maker in generating alternative solutions. Training, careful selection of group members and proper group management methods are needed in order to be successful in using many of these techniques.

Decision and Fault Trees

Considerations of trust, openness, participation, sense of ownership and organization change are relevant to the process of inducing the adoption of suitable model. To some individuals in the organization it may seem intuitively obvious that it is good to have many alternatives and their consequences systematically displayed. But to others in the organization this may be viewed as providing self-exposure to external criticism. These issues must be resolved as a prerequisite to successful implementation. Overall, a major consideration is the balance between the cost of getting believable data for the model and the benefits derived from it. The data must be believable. The process must not be looked upon as "just another exercise." Achieving this is largely a matter of building good cooperative relationships, and constructing suitable and useful models.

Program Planning and Budgeting

The effectiveness of program planning can be improved by devoting proper attention to the commitment horizon, the flexibility and navigational change principles, and the most limiting factor concept. By involving all levels of the organization in participation in the planning exercises, by using some simple motivational methods, and by carefully paying attention to basic human needs, a planning culture can be instituted. Modern cash budgeting and capital budgeting techniques, PPBS and ZBBS methods, GEMPA charts and other systems concepts can thus come to be a natural part of the daily decision-making processes within any organization.

These techniques and processes provide the basis for the application of funding models. Such models can significantly aid in reducing the arduous clerical chores in budget development. They can also increase the capability of the decision-maker to develop budgets that are neither too small nor too large, and to ensure that these budgets are consistent with the organizational goals and performance targets.

Evaluating, Implementing and Controlling the Decision

The overall effectiveness of any decision is a product of its quality, implementation and control. We have reviewed several approaches that may be used to maximize the effectiveness of a decision. A manager who follows these approaches in using the structured decision-making process and the techniques discussed here should be able to dramatically improve the overall effectiveness of the decision-making process.

However, a mechanical approach to the application of the structured decision-making process and the techniques discussed will lead to many disappointments. The key to effectiveness in decision-making is the style, leadership, risk-taking, boldness, judgment, assertiveness and decisiveness qualities of the decision-maker. There is no substitute for "taking the bull by the horns," so to speak. The techniques and approaches presented above can significantly augment these qualities. But they can never substitute them. It is the synergism of the structured decision-making methods and the qualities of the decision-maker that make the difference between an effective and ineffective decision.

NURSING EDUCATION

"The Planning Commission had approved a scheme for training of nurses under the programme 'Continuing Education for Nursing Personnel' and has also allocated a sum of Rs. 40 lakh for the purpose. In three years no initiative has been taken", disclosed Prof. P.N. Srivastava, Member, Planning Commission, while delivering the Convocation Address at the College of Nursing of the Postgraduate Institute of Medical Education and Research, Chandigarh. The project is aimed at updating teachers in schools of nursing with latest trends in health care delivery system with special reference to primary health care. It is essential that their knowledge and skills are updated to enable them to perform their teaching responsibilities in tune with latest trends in the subject, he added. Excerpts

India is a large country with about 700 million people. About 40 per cent of our population still lives below the poverty line. With its large population, our problems are also large and stupendous. In India we have one doctor for a population of about 2600 persons which is bad but not too bad since the corresponding figure for China is 1730 and for Sri Lanka 7620. However, our doctors are concentrated in urban areas. We are aware of the fact that suitable facilities and incentives will have to be provided so that the doctors not only serve the rural areas but in fact live in rural areas.

As against the figure for doctors, the figure for nurses is much worse, or rather deplorable, one nurse for 4670 persons whereas China and Sri Lanka have 1670 and 1260 per nursing person which is far better and we have a very very long way to go even as compared to China and Sri Lanka, what to talk of countries like U.K. where the number of population is 120 per nurse/midwife. Health and Education have always received a raw deal in our country but I am happy that the climate is changing and I am sure there will be considerable stepping up of

plan expenditure for health and family welfare and let me assure you that nursing will get a fair deal.

But planning is one thing and its implementation another—altogether different. I will give you an instance. When I accepted the invitation to come here today I started looking into the plan documents in connection with nursing and I was amazed at the recommendations. In your National Education Policy and Nursing Workshop Recommendations, the first item reads thus "A correspondence course in nursing be established for registered diploma nurses in the country to obtain B Sc. degree in nursing. To start with, a pilot project may be started in a University". Will you believe it that the Planning Commission had approved a scheme for Training of Nurses (Continuing Education for Nursing Personnel) and has already allocated a sum of Rs. 40 lakhs for this purpose. In three years, no initiative has been taken in this matter and just before coming here, I have written a letter to the Minister of Health and Family Welfare in this connection. I will like this college to take initiative in this respect and let a beginning be made immediately. In this project it is proposed to update teachers in Schools of Nursing with latest trends in

Health Care delivery system with special reference to Primary Health Care. It is essential that their knowledge and skills are updated to enable them to perform their teaching responsibilities according to latest trends in health care delivery system. Correspondence course in nursing for registered diploma nurses was not thought of but you may prepare a project which can always be examined. In principle I have full agreement.

Apart from the above, there was still another significant recommendation. The proposal was to bring together representatives of nursing personnel from all the States and Union Territories to discuss and debate on issues of national importance in Health Care Delivery System and its implications on Nursing Education and Nursing Services. This body of Nurses could act as an advisory body for preparing National policies of Nursing Education and Nursing Services. The members of the Indian Nursing Council and Trained Nurses Association will be involved in such a meeting. A sum of Rs. 1 lakh/year was allocated for this but a beginning has not been made yet. It is in such areas that I will like institutions like Post-Graduate Institute of Medical Education, Chandigarh and the All India Institute of Medical Sciences in Delhi to take initiative and guide us.

Nursing is a great and noble profession. Mrs. Samuel in her annual report has defined as a process of action, reaction, interaction and transaction whereby nurses assist individuals of any age group to meet their basic human needs in coping with their health status at some particular point of their life. Every nurse must understand and accept the fact that "Nursing's power rests on Practice". We are all aware of the great hardships in which you work. It will be your greatness not to forget compassion, consideration and kindness even under the greatest of hardships in which you work. Wholehearted support of the public is needed to raise the public image of nurses in India. This will not only improve the recruitment to this profession but also their morale which will ultimately improve their practice.□

Monitoring and Implementation of National Policy on Education

Dr. B.M. Udgaonkar, Former Member, University Grants Commission and Director, Tata Institute of Fundamental Research, delivered the Valedictory Address at the Third Seminar on 'Monitoring and Implementation of National Policy on Education' organised by the Association of Indian Universities at Pune on 27-29 June, 1988 (*University News*, 11th July, 1988). Dr. Udgaonkar posed the fundamental question as to what constitutes a university and said that every university must move to a centre stage meaning thereby that it should build excellence. He did not agree with the suggested distinction between education and training and maintained that every education has a component of training and every training has a component of education. Though he felt legitimately proud of his role in introducing Extension as the third dimension to university education, he decried the large gap between social activity and academic pursuits. He suggested high level of research in extension work to remedy the situation. On the language question, he felt the place of English has to be decided vis-a-vis regional language as the medium of instruction. The structuring of courses, he said, should be more than syllabus writing and sheer number of students may completely alter the concept of *restructuring*. He was happy that after nearly a decade the concept of autonomy has been accepted. He pleaded for a target oriented approach and said that every college must be autonomous by 2000 A.D. He also suggested organising norms setting examinations at the national level by the proposed National Testing Service. He

reiterated that the university must realise the collective responsibility for excellence and build credibility in its working.

The following recommendations emerged after intensive deliberations at the seminar :

Secondary Teacher Education

(1) On the question of comprehensive training programme to be organized by educational colleges and University departments for primary and secondary school teachers, it was felt that there was a strong case for considering such a scheme at the University level. However, it was affirmed that the University education department/college of education and other proposed structures lik DIET as well as other agencies at the State level, concerned with teacher training, would have to work in close collaboration and establish proper linkages in order to set up such a comprehensive training programme.

(2) There was scope for conducting research in educational training with dynamic linkage between research and training processes at the various levels in the University. It was considered necessary to provide incentives for conducting research in this area.

(3) The group categorically expressed its concern at the tendency in some Universities to promote educational training at the first degree level through correspondence. It was felt that such courses should not be encouraged and the ones that are in operation should be terminated.

(4) It was stated that many government schemes particularly those of the Government of India are not circulated widely to the Universities and therefore the Universities are not able to take advantage of these schemes. Information about these schemes is generally sent only to the State Government agencies. It was, therefore, proposed that all such Government of India Schemes should cover the Universities for participation. Specifically, it was stated that the funds under such schemes should be made available directly to the Universities rather than through the State Government Departments.

(5) The UGC should formulate and enforce objective criteria for the establishment of advanced centres of studies in education at the various Universities.

(6) There should be enough provision in the UGC scheme for orientation of teacher trainers in the schemes under NPE and POA.

(7) It was suggested that language teachers should be given adequate training in teaching of third languages under the Three Language Formula in the backdrop of NPE and POA. Available facilities for this training should be fully exploited and newer avenues may be explored.

In-service Education of Teachers

(1) It was agreed that in-service refresher programmes for teachers of secondary schools as well as primary schools should be organized by B.Ed. colleges and Departments of Education in the Universities so as to provide in-service training to each teacher every five years.

(2) Academic Staff Colleges should similarly undertake Facu-

lty Improvement Programmes at University level.

Teachers and the Planning and Management of Education

(1) It was observed that there was involvement of teachers at various levels of University and college administration in all the Universities in the region, though there was no single uniform pattern of teacher's representation on the various bodies. By and large teacher representatives on various bodies in colleges and universities are selected through elections. While this fulfils the condition of involvement of teachers, it did not always lead to healthy practices. It was reported that because of this system, experienced and senior teachers tended to stay out of the various academic bodies in the University. In view of this, it was suggested that teachers' representation on various bodies of the Universities should be by nomination and Ex-Officio representation by seniority and rotation. It was felt that this would ensure, on the one hand that experienced and senior faculty members would participate in the management of the affairs of the University, and on the other, it would discourage unhealthy practices which have become a part of the electioneering culture in the Universities.

(2) In some universities, under the existing provisions, it was possible for the members of the lay public to be elected on the University bodies and in some cases such non-specialized members were elected to the positions of academic responsibilities. It was, therefore, suggested that only teachers with adequate expertise and background should be represented on the various academic bodies of the Universities to ensure both proper

representation and effective management.

(3) It was argued that in most cases teacher representation could only be limited to a very small number of people. In order to ensure wider participation of teachers in decision-making and administration, departmental councils should be established in the University and college departments where all members of a particular department would be members of the council. This would ensure 100% involvement of all college and university teachers in academic and administrative affairs of these institutions.

(4) It was suggested that the Association of Indian Universities (AIU) may prepare draft Model University Act keeping in mind the various aspects of educational planning, management and implementation in the light of the development of the Indian Universities and higher education in general. The AIU should submit such a Model Act to the UGC for further discussion and recommendation to the various state authorities for adoption at the state level. AIU should be represented on the UGC Committee on Model Act.

(5) It was suggested that the highest positions in the University like Vice-Chancellor, Pro-Vice-Chancellor should as far as possible be filled by educationists rather than people from other professions.

Living and Working Conditions of Teachers

(1) It was pointed out that there is disparity in the scales of Principals of Colleges of Education and other colleges. This disparity arises from the fact that the colleges of education do not have large

students strength and therefore, the Principals are given the Reader's scale as against the Professor's scale in general colleges with large students population. It was, therefore, recommended that the criterion of number of students for determining the scale of pay of Principals of B.Ed. colleges, should be changed and they be given the same pay scale as Principals of general colleges.

(2) It was reported that when teachers proceeded on study leave, salary of substitute teachers was not made available to the colleges/Universities by the state authorities/UGC. This created a number of difficulties like the posts not being filled, or the teachers proceeding on study leave not being given salary during that period. It was, therefore, recommended that provision for salary of substitute teacher in place of teacher proceeding on study leave be made available.

(3) It was felt that the Universities should have flexibility in creation of additional senior posts, if required due to demand of subject specialization or if some senior and aminent teachers are available in the department who could not get promotion due to limited number of senior posts.

(4) Adequate liberal housing loans funds should be made available to teachers for constructing houses. For this purpose it was suggested that rotating funds may be created at the college/university level.

(5) Housing for women teachers may be given due consideration.

(6) Adequate space should be made available for all the staff members at the college/university

level for office and academic purposes.

(7) When a teacher moves from one University to another in the same state or in another state, he should be allowed to carry with him service benefits that have accrued to him in his previous employment. It was felt that such a move would be in consonance with the provisions of NPE and POA of providing greater mobility to college end university teachers.

(8) All college/university teachers should be given LTC facilities on the pattern of central universities.

(9) It was reported that some private educational trusts/societies in the region tended to transfer teachers and principals from one college to another, sometimes from one University area to another University area, causing hardship to the teachers. Such practices by private educational societies should be discouraged.

Grievance Removal

(1) Minor grievances should be resolved at the University level through a committee of Executive Council. However. there must be provision for an appeal to a quasi judicial tribunal in case a college/university teacher, so desires

(2) Central Educational Tribunal benches at the state level as recommended by the Law Commission may be established.

(3) Summaries of judgements for Principals / Vice - Chancellor should be made available.

(4) Orientation of Principals/Deans/Vice-Chancellor in the process of tribunal must be undertaken.

Restructuring of Courses

(1) The UGC pattern of Foundation Course + Core Courses + Applied Courses may be expanded to include Vocational Courses and Personality Development Courses.

The weightage of different courses proposed is as under :

Course	UGC weightage	Proposed weightage
1. Foundation	25%	8%
2. Core	50%	67%
3. Applied	25%	15%
4. Vocational	—	10%
5. Personality Dev.	—	Some weightage to be given
6. Project work	—	—

Under the proposed restructured programmes science stream had more contact hours per week than commerce and arts streams. It was therefore suggested that the contact hours for the arts stream should be increased to that of commerce which at the moment is around 25 contact periods.

(2) It was agreed that foundation courses should include

— India's composite culture
— Women Studies
— Value education (care for the old)

These topics would be in addition to other topics such as scientific temper, History of India, environment protection, population, etc.

(3) It was agreed that weightage/recognition must be given for participation in creative co-curricular activities like NSS, NCC. Adult Education, Sports and Games. etc.

(4) It was suggested that special funds should be made available to universities and colleges undertaking reorganization of courses under the NPE and POA.

(5) It was agreed that while a uniform model of restructured courses should be implemented at the regional or national level, the specification of courses under the various components, especially the application and vocational components, would depend on local conditions and local needs of region.

There is at present no uniform pattern of the number and choice of subjects at the B.A./BSc./B.Com. level in various universities. Honours and General or Pass courses are taught at different universities. In the restructuring a clear distinction needs to be made amongst these especially in the context of admission to the Master's programme in various faculties.

Education for Women. SC and ST, Backward Minorities and Handicapped

(1) Empowerment of women would be possible through curriculum revision and proper restructuring of courses.

(2) Every university and college must have a Women's Studies Cell.

(3) Education for women's equality is the responsibility of all sections of the society. Voluntary agencies and university should join hands together instead of working individually at all levels. It requires synthetic approach and should be dealt in its totality. It is not the concern of women alone.

(4) Courses should be devised with emphasis on education for women's equality. These courses should be common for boys and girls. The work done by NCERT in this direction was highly appreciated.

(5) Our goal should be development oriented education for women. Foundation courses for women should be introduced as a part of course component.

(6) Awareness of Women's problems should be created through all media—folk media as well as mass media. Street plays must be organised to arouse awareness in society about the equal status of women.

(7) In adult literacy, women's education should be given top priority. There should be circulating libraries to spread reading habits amongst women for post literacy period.

(8) There is need for training of more nurses. Proper care should be taken for women's health education. Provisions must be made for them in education for health care.

(9) All state assistance should be provided for formal as well as non formal education of women. In Gujarat, women's education is free at all levels. This has resulted in creation of favourable response. Other states may follow suit.

(10) Women's polytechnics should be established in large numbers. Skill development linked to work opportunities should be developed.

(11) Courses with sexist-bias and streotypes from school textbooks should be eliminated.

(12) In every college library a corner should be reserved for literature regarding women's education. One of the papers in examination should be introduced in examination in lieu of other papers.

(13) Various types of incentives should be given i e. marks, etc. Scholarship, admission and recruitment, the age of entry should be relaxed.

Scheduled Castes Scheduled Tribes

(1) There should be coordination between state, centre, universities and voluntary agencies to avoid overlapping and duplication.

(2) SC ST cells should be established in the colleges.

(3) Adequate reservation should be there in educational institutions for admission especially upto high schools which should be effectively implemented.

(4) Effective ways should be sought for payment of scholarships to SC/ST students in time.

(5) Remedial courses and measures must be introduced to upgrade their educational standard.

(6) Special classes must be arranged for training for IAS and other competitive examinations.

(7) Funds and staff should be available from UGC or State Govt. for implementation of SC/ST welfare programmes.

(8) Social conditions should be created through formal and non formal education to accept SC/ST students on equal basis. Textbooks can be prepared by NCERT.

Minorities

(1) The definition of MINORITY must be more specific. It should be defined by law in more specific way.

(2) Voluntary agencies must work in cooperation with universities.

(3) Additional training programmes must be arranged.

(4) National integration and secularism should be made part of textbooks.

(5) More community polytechnics should be established.

Handicapped

(1) Special institutions should be established to meet their needs.

(2) Special Research programmes should be taken up to study their problems of education.

(3) Social awareness should be created to generate confidence in handicapped persons.

(4) State Govts. should also take more interest in the uplift of handicapped through educational programmes.

(5) All available opportunities must be widely notified.

(6) Training of research personnel should be given priority.

EXTENSION

(1) Education and productivity must be combined.

(2) Extension work should be considered at par with research and teaching work.

(3) It should be measured in such a way that teachers' contribu-

tion should be counted in work load.

(4) Other modalities for giving credit for extension work ought to be considered.

(5) Ph.D. degree should also be given in case of research in extension work.

(6) Coordinators should be appointed in colleges also.

(7) There is need to ensure equity, efficiency and equality in extension work.

(8) Non-viable units can be turned into community colleges and they should be made autonomous.

(9) The university should discharge its responsibility towards society through community colleges.

(10) University and all development agencies must work together in extension programmes through proper coordination.

(11) Teachers should be taken into confidence in implementation of rural programmes.

Research

(1) Interdisciplinary research should be encouraged.

(2) There should be proper reporting system about all the research programmes and research performances.

(3) There should be a research committee in each university for guidance.

(4) Every university must have its own research base.

(5) Regional media must be used for development.

(6) Models of Agricultural Universities in this direction can be followed.

(7) Research worker and university should be fully equipped.

(8) Work already done must be brought to the notice of research worker.

(9) There should be greater opportunities, and inbuilt checks and balances.

(10) SC/ST and Women should be encouraged to take up research work.   ☐

Open Universities Network Planned

Prof. G. Ram Reddy, Vice-Chancellor of Indira Gandhi National Open University and Secretary General of the newly formed Asian Association of Open Universities, revealed that plans were afoot for co-operation in the field of distance education among the countries of Asia. He said that by exchanging course material among the member countries of the Association both time and money could be saved.

India, Pakistan, Sri Lanka, Thailand, Indonesia, Japan and Korea have already become members of the Association and China is expected to join soon.

Prof. Ram Reddy said though the National Open University was inaugurated in India only in November 1985, it has already on its rolls some 32,000 students. While a detailed and systematic survey to identify the areas in which courses have to be started is still underway, the University has already introduced some diploma and degree courses. Early in 1986 the university introduced a diploma course in distance education. This was done keeping in mind the university's own need for thousands of personnel to make the concept of distance education a success.

The other diploma programmes started by the University are in management, rural development, food and nutrition and creative writing. This year the university has also started enrolling students for BA and B. Com undergraduate courses.

Next year the National Open University will, for the first time, introduce science undergraduate courses.

The courses at the Open University would be different from the ones offered by conventional universities. First, the students will go through a foundation course in science, technology and humanities and then the core course.

With the establishment of more open universities by various state governments (at present besides the National Open University there are only two other open universities in the country, Andhra Pradesh and Rajasthan), it is envisaged to establish a network of open universities. Once the network is established a student enrolling in any one of the open universities will be able to avail of the material from any other Open University.

UGC Promotes Inter-University Centres

The University Grants Commission (UGC) is promoting establishment of inter-university centres in specific disciplines to nurture scholarship and advanced research. These centres will pool together talents and resources from all universities to grow into centres of excellence. According to Prof. Yash Pal, Chairman, UGC, the rationale behind the Inter-University Centres, was that universities contained vast pools of potential manpower in the form of students but modern facilities were available only under the aegis of national laboratories. By interaction university departments will grow in research and improve in teaching while national laboratories will be able to tap academic talent, he said.

These centres will have independent governing bodies, enjoy autonomy like the universities and get funds from UGC and Government. The first such venture has taken shape as the Inter-University Accelerator Centre or the Nuclear Sciences Centre in New Delhi. The second one will be the Inter-University Centre for Astrophysics to be located in the Poona University campus, where the world's largest and versatile giant metre wavelength radio telescope will be installed.

Prof. Yash Pal said UGC wanted the universities to explore every possibility of interaction with national science and industrial research laboratories by having a system of mutual associateship. Scientists in national laboratories can be made associate members of university centres of advanced research, he said. Similarly teachers and students of universities can be taken in as associate members of the national facilities.

Prof. Yash Pal said the Nuclear Sciences Centre in Delhi will have several experimental facilities including the 15 million volt tandem accelerator which will be ready by the end of 1989. UGC has provided funds to the tune of Rs. 5 crore for the project, registered as a society to function as an autonomous body. It will have the best of facilities needed for advanced research in atomic physics, nuclear chemistry. It will be a centre par excellence.

The Inter-University Centre for Astrophysics at Pune would be in collaboration with the Giant Metre Wavelength Radio Telescope (GMRT) project to be set up by the Tata Institute of Fundamental Research (TIFR). The facility will give opportunity to students throughout the country to experiment on several aspects of astrophysics. The location of the GMRT centre within a university campus would be mutually beneficial.

Researchers and students from different universities will work together in the inter-university centres which will emerge as a storehouse of knowledge.

Bombay University Plans New Centres

The University of Bombay proposes to launch various new schemes. The postgraduate schemes include a school for foreign and Indian languages, a department of research and training in Ayurvedic medicine, a centre for fine arts and a media centre.

The proposed Ayurvedic department seeks to establish a herbarium for the identification of plants. The centre for advanced studies in arts, sculpture and painting would provide post-graduation facility for "candidates of promise" and facilitate exchange programmes between artists of various countries. The media centre would expand the directorate of distance education into open exchange facility, set up an academic staff college, a women's polytechnic and develop communication technology.

The University also seeks to set up a postgraduate centre for the Konkan area which would emphasise the relevance of an applied components group addressing itself to natural resources and local needs.

Biological Rhythms in Man

The School of Biological Sciences of the Madurai Kamaraj University is reported to be conducting an experiment on human circadian rhythms. The university's animal behaviour department has built a 'human isolation facility' to study biological rhythms in man. Only

the sixth such facility in the world, it was commissioned late last year with a volunteer scientist staying in isolation in the 'room without windows' for three weeks. Given no societal cues to time, his sense of time was measured using sophisticated equipment like a 'solicorder', which measures room temperature and wrist movement (locomotion), and an 'event recorder', which notes down all activities the room's occupant engages in by a push button method.

The animal physiology department is working on sericulture to improve the quantity and quality of silk output. Researchers have optimised the food requirements and feeding schedules of larvae of silkworm for optimum silk production. The results show a significant increase in the economic characteristics of silkworms such as larval, silk gland and cocoon weights and cocoon shell ratio.

The school also has a unit under it, the newly set up centre for biology education, recognised by the UGC as a National Centre for Science Education. The centre's plans include starting a bioinformation centre to improve science education, evolving a national level item evaluation centre with access to all universities, publishing books and laboratory manuals for students' use and formulating computer aided instruction in biology.

UGC Team Visits Bhopal Varsity

The U.G.C. Expert Committee on mid-term appraisal of VII Plan visited the Bhopal University recently. The Committee reviewed the implementation of VII Plan of the Universty in respect of teaching programme, research, buildings and the different components of the

New Education Policy. It also visited three colleges and reviewed the implementation of new education policy in terms of restructuring of courses and infrastructural facilities available in the colleges.

Augmenting Research Facilities at TIET

Under its 'Institution Network Scheme' the Union Government has provided a sum of Rs. 5 lacs for the consolidation of Material Science Laboratory at the Thapar Institute of Engineering and Technology (TIET), Patiala. This work will be undertaken with the help of IIT, Delhi.

A Laser and Fiber Optics Laboratory will be set up in the Institute in the Applied Sciences Department, for which Rs. 5.5. lacs have been sanctioned under the Plan Scheme of Government of India. These Laboratories will further enhance the Research potential at the Institute.

Evaluating Technical Institutions

The Union Government proposes to set up, through the All-India Council for Technical Education, a National Board of Accreditation to periodically conduct evaluation of technical institutions and their programmes on the basis of norms and standards specified by it. The purpose of accreditation will be to identify those institutions and professional programmes in engineering and technology which are worthy of recognition in the professional engineering context. It will also recommend recognition and de-recognition of the institutions.

The proposed board shall comprise persons and groups interested in maintaining the

standards of technical education. The board may consist of 25 members. It shall be funded by the Government. The findings of the board will be communicated to the institutions and a list of the accredited institutions shall be published.

The council may also take steps to check increasing commercialisation of technical education and prepare suggestions to involve private and voluntary efforts to develop technical education facilities in the country.

MRTPC Restrains Maithili

The Monopolies and Restrictive Trade Practices Commission (MRTPC) has restrained Maithili University, Darbhanga from describing itself as a 'university' or having the word university in its name. It has also restrained the educational body from conferring degrees of B.A., B. Com, M.A., M. Com, and M.B.A.

Passing an ex-parte interim injunction, the Commission has restrained Vijay Tutorials, Puttur, South Kanara also from misleading the students about the 'quality and standard' of degrees of the so-called Maithili University, Darbhanga. The tutorials have been asked not to claim that the degrees awarded by Maithili University were recognised by the Government of India for employment purpose.

The order way passed by the Commission on an application moved by the Director General (Investigation and Registration) who had received a complaint from Consumers Education Trust of Mangalore that Vijay Tutorials, a teaching shop, was misleading the students by issuing letters that they could obtain B.Ed. and other degees of Maithili University, Darbhanga by post/personal coaching. The Vijay Tutorial further misrepresented to the students that B.Ed. degee awarded by Maithili University were recognised by the Government of India for employment purpose.

It may be notified that Maithili University' was neither a university established under the Central Act or a State Act or a deemed university under section three of University Grants Commission Act and that the degrees awarded by it are not recognised.

Moderni ing Social Work Syllabi

Students and teachers from Delhi University, Jamia Milia, Department of Social Work of Delhi University and members from other agencies like Plan International, Centre for Community Economics and Development Consultants Society, Indo-German Social Service, United Nations High Commissioner for Refugees, Prerna, are reported to have formed working groups to review the social work curriculum in all the schools of social work to develop models of practice, forms and levels of training, explore new areas of social work practice.

The working groups were formed after two-day deliberations at a consultation on social work practice in India organised recently by the Society for Promotion and Re-organisation of Self Help at the Indian Social Institute in New Delhi.

It was felt at the meeting that, "The 20th century phenomena of professional social work is urban based. The centres of learning are located in the metropolitan cities, therefore the training imparted is also useful in dealing with urban problems. This in itself reflects that the majority of our rural population is practically left uncovered by the professional."

ASSOCIATION OF INDIAN UNIVERSITIES

CORRESPONDENCE COURSE IN EVALUATION METHODOLOGY & EXAMINATIONS

Applications are invited from college university teachers for admission to Correspondence Courses in Evaluation Methodology and Examinations at Basic Level, Intermediate Level and Advanced Level Special Professional Course. The duration of each of the three courses is six months. A personal 'Contact Programme' for three days is planned for each of the three courses Universities Institutions sponsoring candidates can meet the registration course fees from out of unassigned grants by UGC.

Request for prospectus and application form accompanied by a crossed Indian Postal Order for Rs. 10 - drawn in favour of the Secretary, Association of Indian Universities and a self addressed stamped envelope (Rs. 2/-) should reach the Director (Research), Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi 110002. Last date for receipt of applications is **15th September** for non-sponsored and **26th September, 1988** for sponsored candidates.

Research Fellowships Enhanced

The Department of Education in the Ministry of Human Resource Development has announced enhancement of the research fellowships and associateships and the contingent grants for Ph.D. students in the Indian Institutes of Technology and other technical institutions recognized by the All-India Council for Technical Education. The decision is effective April 1, 1987.

For Ph.D. students with B.Tech. B.E., M.Sc or M.A. qualifications the enhanced fellowships will be Rs. 1,800 p.m. for the first two years and Rs. 2,100 p.m. for the remaining three years. The Ph D. students with Master's degree in Engineering or Technology will now get Rs. 2,400 in the first two years and Rs. 2,500 in the subsequent years.

UGC Team Visits Kurukshetra Varsity

The Department of Physics, Kurukshetra University, in collaboration with the Department of Biology, proposes to establish a new department of Biophysics and Biotechnology. The Department of Earth Science has a proposal to start M. Tech and M.Sc. courses in Applied Geology during the eighth plan of the University. This was revealed by Mr. M.K. Miglani, Vice-Chancellor of the university, during a meeting held recently between an expert committee of the University Grants Commission headed by Prof. P.N. Trehan and a team of Kurukshetra University.

Mr. Miglani said that the Department of Mathematics had been recommended for its inclusion in the intensive aid programme. The department had also been chosen by the Department of Atomic Energy to hold a national level workshop on cohomolgy of groups.

Another Campus for Poona University

The University of Poona is likely to get a 32 hectare piece of land at Moshi Village in the Pimpri-Chinchwad area for its expansion. The Pimpri - Chinchwad Municipal Corporation, which has agreed to hand over the land to the University, is also considering its request to help construct a building on the campus. This was revealed by the Vice-Chancellor Prof. V.G. Bhide.

Prof. Bhide said the Corporation was requested to earmark an additional 80 hectare area in the vicinity for future needs and added that the University wanted to develope the new campus on the pattern of Kalina of the Bombay University. Departments for subjects such as Computers, Electronics, Biotechnology and Sociology would be set up there besides the science and technology park.

Library Information Centre

A Library Information Centre to provide services to the academic community in the country has recently been inaugurated by Prof. S.K. Khanna, Secretary, University Grants Commission, at the SNDT Women's University.

A U.G.C.-sponsored project, the centre aims at improving access to information and provide bibliographic support in the fields of sociology, women's studies, home science, special education, library and information science and Gujarati language and literature. The services of this centre will be available to facuty members, students, research scholars and others involved in teaching, research, extension and communication in colleges and universities throughout the country.

Design for Olympics - 88

Professor B.S. Grewal's postage design has been accepted for publication on the "Seoul Flame", the Newsletter of the Seoul Olympic Organizing Committee.

Professor Grewal, Dean of Students' Welfare, Punjabi University, Patiala is a known Olympic philosopher and his contributions have repeatedly been appreciated by the Olympic Committees since 1968 Mexico Olympics.

New Postgraduate Courses

The Mother Teresa Women's University, Kodaikanal proposes to introduce Postgraduate Courses with a slant on women during the current academic year. The courses are M.A. in Historical Studies, M.A. in Tamil, and M.A. in Women's Studies.

These courses will serve as feeder courses for Research in Women's Studies. The syllabi for the above courses have been formulated by an Expert Committee and approved by the Academic Committee, which met on 16th July, 1988. A project and detailed study of a book in lieu of a paper are the special features of these courses.

Inter-Varsity Debates

The University of Kashmir has drawn up a number of academic and co-curricular programmes for the youth of country to be organi-

sed during October/November, 1988 at the National Level. The programmes are (1) Inter-University Debate in English for Sheikh Mohammad Abdullah Rolling Trophy; and (2) Inter University Debate in Urdu for Allama Iqbal Rolling Trophy.

Besides attractive trophies, individual cash prizes for the debates sponsored by the Jammu and Kashmir Bank Ltd., Srinagar, will be awarded.

— 1st prize of Rs. 1000/- plus a certificate

— 2nd prize of Rs. 750/- plus a certificate

— 3rd prize of Rs. 500/- plus a certificate

— Two consolation prizes of Rs. 300/-each plus certificates

— One consolation prize of Rs. 300/- for the Best Lady Speaker, plus a certificate (if not a prize winner).

Universities are welcome to send a team of two students for each Debate. There is an entry fee of Rs. 25/- for each Debate which is to be paid by the sponsoring University through Bank Draft/Postal Order in the name of the Dean, Students Welfare, Universsty of Kashmir, Srinagar. The last date of receipt of entries is **August 30, 1988.**

Research Methodology on Women's Studies

As part of its staff training project, the Research Centre for Women's Studies (RCWS) of the SNDT Women's University conducted a two-week workshop on Research Methodology on Women's Studies. The workshop discussed the relevance of qualitative methods such as anthropological field work, folk material, oral history, autobiographies etc., as important sources for understanding women's lives. Experts dealt with the basic types of tools used in quantitative methods for analysis of data, including use of computers. The emphasis at the workshop was on a problem solving approach and the resource persons made the participants reflect, react and respond. A research manual was also prepared and distributed to participants as background papers.

Prominent among those who participated as resource persons were Dr. Victor D'Souza, Dr. Nirmala Banerjee, Dr. Swapna Mukhopadhyaya, Dr. Purnima Mane, Dr. C.S. Laxmi, Dr. Neera Desai and Dr. Maithreyi Krishnaraj.

Certificate Course in Food and Nutrition

The Andhra Pradesh Open University (APOU) proposes to introduce a Certificate Course in Food Nutrition in Telugu. The course developed by Indira Gandhi National Open University is being adopted by the APOU. Disclosing this Dr. C. Narayana Reddy, Vice-Chancellor, A.P. Open University, said that notification will be issued shortly calling applications for this course. Dr Narayana Reddy also said that a total of 5 Study Centres (2 in Twin Cities of Hyderabad and Secunderabad. and one each in Tirupati, Visakhapatnam and Warangal) will be started for this course. The duration of this course will be six months. This is an awareness course and does not require any formal qualifications. The course will be particularly useful to those who are working in Anganwadies, Balwadies, Voluntary Organisations, etc.

Central Assistance for Anna Varsity

The Ministry of Human Resource Development of the Government of India, have sanctioned a sum of Rs. 35.00 lakhs to Anna University for meeting the recurring and non-recurring expenditure for the following schemes under the area of emerging technology and area of critical needs.

Rs. 25.00 lakh for strengthening Infrastructure in Remote Sensing Sub-Centre for advanced level Research and development activities and for training manpower.

Rs. 10.00 lakh for expansion of facilities in Electronics Instrumentation Laboratory.

NLC Supports Degree Course in Mining Engineering

The Neyveli Lignite Corporation Limited, one of the industries approached for financial assistance, has sanctioned a sum of Rs. 25.00 lakhs to Anna University for strengthening the B.E. degree course in Mining Engineering.

The Course with an intake of 30 had been started by the University from the year 1987-88.

We Congratulate . . .

Prof. **Mohit Bhattacharjee who has been appointed Vice-Chancellor of the University of Burdwan, Burdwan.**

New Courses at HAU

Haryana Agricultural University (HAU) proposes to introduce four postgraduate and two undergraduate courses from the current academic session.

These courses are M.Sc. in clothing and textiles, child development, family resources management and seed technology, B.Sc. in agriculture (six-year-programme) and B.Sc. in home science (five-year-programme).

New Hybrid Coconut Variety

The Kerala Agricultural University has developed 'Laksha Ganga', the first coconut hybrid variety. This new variety is a cross between the dwarf Andhra Pradesh variety 'Ganga bondam' and tall Lakshadweep ordinary using the former as male parent and latter as (10XGB) female. Laksha Ganga has out yielded all other coconut hybrids and its parents in nut production, copra out turn and oil production.

Laksha Ganga, the tall hybrid which starts flowering at the age of five years produces an average yield of 108 nuts per annum per year. The highest recorded nut production per annum is 236 per palm. Mean weight of nut is 677 gm and mean weight of husked nut is 380 gm. This variety is also capable of producing an average yield of 3749 kg., of copra per hectare. The mean weight of copra per nut is 195 gm. and mean copra yield per palm per year is 21 kg.

This new hybrid variety can be successfully cultivated under rainfed condition in Kerala. However, no particular emphasis can be laid on the pest and diseases tolerance. Its economic attributes could be best utilised for increasing coconut production in the state.

Stress on Women Education

"Despite the gains of green revolution, the quality of life in the villages had not improved and the women folk in particular had to suffer because of improper toilet facilities and smoky kitchens in the rural homes", said Dr. G.S. Gill, Additional Director of Extension Education of the Punjab Agricultural University while presiding over the concluding function of a five-day training course on better home-keeping for the rural women at Nangal in Jalandhar district. Dr. Gill urged that the women should be given proper education about nutrition, child care and home-keeping since they had equally contributed to the development of Punjab.

Dr. (Mrs) S. Roy, Head of the Department of Home Science Education & Extension of the PAU explained that the training course was organized in collaboration with the local branch of the Canara Bank which had spent about Rs. 5 lakhs for the overall development of this village. The trainees which numbered 90 were educated about the nutritious diet, preparation of different recipes, care of children, family health, making decoration articles from waste materials and use of modern kitchen appliances and smokeless chullahs.

INSAT-1B Programme of UGC

Between 11th August to 31st August, 1988 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV Network throughout the country. For the viewers in Delhi and surrounding areas these programmes can be seen on the second channel.

11.8.88

"Deccan Traps—Archives of Ancient Volcanism"
"Giants of the Mico-world"

"Computer Quiz"

12.8.88

"Vikram—The Visionary"
"Transformation and Matrices"
"Drug Menace—III"

13.8.88

"Design and Environment—II Timeless Forms for Living Functions"
"Nuclear Application : Nuclear Art France"
"Natural Processes in Language Acquisition—I"

14.8.88

No telecast.

15.8.88

SPECIAL PROGRAMMES (To be announced later)

16.8.88

"Teleteach—X"
"New Ways for Steel"
"Red Eye"

17.8.88

"City that Jaisal Built"
"The Vertebrate Kidney"
"Energy for All"

18.8.88

"Astronomy Through the Ages—I"
"Food From the Sea"
"Computer Application"

19.8.88

"Dilation in Skew Direction"
"Drug Menace—IV"
"Murmur in the Brook"

20.8.88

"Design and Environment—III The Language of Culture"
"Natural Processes in Language Acquisition—II"
"Mail—I"

21.8.88

No telecast

22.8.88

"Television Classroom—Scaler, Vector and Tensor"
"Raw Materials—Soya Beans"
"Graduate Kisan"

23.8.88

"Shapes of Molecues"
"Teleteach—XI"
"Fractures—I"

24.8.88

No telecast

25.8.88

"Introduction to Microcomputers"
"The Pond"
"Astronomy through the Ages—II"

26.8.88

"Modelling Stock Control"
"Of course I have Problems"
"Hanuman Languages of Rajasthan"

27.8.88

"Design and Environment—IV Forms for Communication"

"Language Planning"
"Mail—II"

28.8.88

No telecast

29.8.88

"Listening to Molecules— Photoacoustic Readings"
"Raw Materials—Coal"
"The End of Pounding"

30.8.88

"Teleteach—XII"
"Fractures—II
"Proteins : Chemical Structure"

31.8.88

"Digestion"
"The Quick Brown Fox Jumps Over A Lazy Dog"
"University Round Up"

Indian Expertise in Science and Technology

Attention Scientists and Technologists

The Research Cell in Economics of Education of the Association of Indian Universities is conducting a survey of Indian expertise in science and technology in the University sector It is proposed to prepare a comprehensive database of the skills, knowledge and facilities of the university level institutions as well as a directory of experts in various disciplines of science and technology. The survey is also intended to catalogue the expertise and current research work of Indian scientists and technologists in various fields of science and technology, and will be used as an input for the compilation of a comprehensive database on the scientific and technical manpower in the country The database will provide a ready reference to the industry, commerce and allied sectors of Indian economy for identifying experts in the relevant fields.

The scientists and technologists engaged in teaching and research in the universities and university level research institutions in India **at the lecturer or equivalent and above levels** only are requested to fill-up the prescribed form, which can be had from the undersigned. The completed form should be returned latest by **September 30, 1988.**

The responses from the academic and research staff are solicited, and their cooperation would be highly appreciated in our venture to build up a comprehensive database.

For the prescribed form, kindly write to :

M M Ansari
Joint Director
Research Cell, Economics of Education
Association of Indian Universities
AIU House, 16 Kotla Marg
NEW DELHI 110 002

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertation as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

CURRENT DOCUMENTATION IN EDUCATION

A List of Select Articles culled from periodicals received in the AIU Library during July, 1988

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Partington, Geoffrey. The concept of progress in Marxist educational theories. *Comp Edn* 24(1), 1988, 75-89.

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Bartling, Carl A. Longitudinal changes in the study habits of successful college students. *Ednl and Psy Measurement* 48(2), 1988, 527-35.

Gliessman, David H. and others. Variables influencing the acquisition of a generic teaching skill. *Rev Ednl Res* 58(1), 1988, 25-46.

Heausler, Nancy L and Thompson, Bruce. Structure of the torrance tests of creative thinking. *Ednl and Psy Measurement* 41(2), 1988, 463-8.

Hembree, Ray. Correlates, causes, effects and treatment of test anxiety. *Rev Ednl Res* 58(1), 1988, 47-78.

Pitner, Nancy. J. Leadership substitutes : Their factorial validity in educational organizations. *Ednl and Psy Measurement* 48(2), 1988, 307-15.

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Sinha, C.S.P. National and regional identities in India : Historical perspective. *J Indian Edn* 13(5), 1988, 42-6.

EDUCATIONAL PLANNING

Bjorklund, Anders. What experiments are needed for manpower policy ? *J Human Resources* 23(2), 1988, 267-77.

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Bradley, Michael G and Graham, John W. Education and asset composition. *Eco Edn Rev* 7(2), 1988, 209-20.

CURRICULUM

Vaideanu, George. Interdisciplinarity in education : A tentative synthesis. *Prospects* 17(4), 1987, 489-501.

TEACHERS & TEACHING

Amrik Singh. The teachers' strike and after : Emerging trends and issues. *Eco and Pol Weekly* 23(29), 1988, 1484-96.

Menges, Robert J and others. Strengthening professional development : Lessons from the Program for Faculty Renewal at Stanford. *J Hr Edn* 59(3), 1988, 291-304.

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Datta, Kamal. Computer education in Indian secondary schools : A survey of CLASS. *Prospects* 17(4), 1987, 581-6.

Dieuzeide, Henri. Computers and education : The French experience. *Prospects* 17(4), 1987, 531-7.

Makau, Benjamin M. and Wray, Brian. Microcomputers in education : A Kenyan experience. *Prospects*, 17(4), 1987, 571-9.

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Albanese, Mark A and Sabers, Darrell L. Multiple true-false items : A study of interitem correlations, scoring alternatives, and reliability estimation. *J Ednl Measurement* 25(2), 1988, 111-23.

Kolen, Michael J. Defining score scales in relation to measurement error. *J Ednl Measurement* 25(2), 1988, 97-110.

Watkins, David and Afzulpurkar, Nitin, Class size and student ratings of tertiary courses. *Ednl and Psy Measurement* 48(2), 1988, 523-6.

Wilcox, Rand R. and Wilcox, Karen Thompson. Models of decision making processes for multiple-choice test items : An analysis of spatial ability. *J Ednl Measurement* 25(2), 1988, 125-36.

ECONOMICS OF EDUCATION

Baum, Sandra R. and Schwartz, Saul. Merit aid to college students. *Eco Edn Rev* 7(1), 1988, 127-34.

Hartog, Joop and Oosterbeek, Hessel. Education, allocation and earnings in the Netherlands : Overschooling. *Eco Edn Rev* 7(2), 1988, 185-94.

Huang, Wei-Chiao. An empirical analysis of foreign student brain drain to the United States. *Eco Edn Rev* 7(2), 1988, 231-43.

James, Estelle. Student aid and college attendance : Where are we now and where do we go from here ? *Eco Edn Rev* 7(1), 1988, 1-13.

Kim, H. Youn. The consumer demand for education. *J Human Resources* 23(2), 1988, 173-92.

Lawma, T. Earning-occupation-education inter-relations : A case study of North-East India. *Manpower J* 22(1), 1986, 1-28.

McMahon, Walter W. Potential resource recovery in higher education in the developing countries and the parents' expected contribution. *Eco Edn Rev* 7(1), 1988, 135-52.

Prais, S. J. Two approaches to the economics of education : A methodological note. *Eco Edn Rev* 7(2), 1988, 257-60.

Ruhm, Christopher J. When 'Equal opportunity' is not enough : Training costs and intergenerational inequality. *J Human Resources* 23(2), 1988, 155-72.

Stampen, Jacob O. and Cabrera, Alberto F. The targeting and packaging of student aid and its effect on attrition. *Eco Edn Rev* 7(1), 1988, 29-46.

Tachibanaki, Toshiaki. Education, occupation, hierarchy and earnings. *Eco Edn Rev* 7(2), 1988, 221-9.

Williams, Gareth. The debate about funding mechanisms. *Oxford Rev Edn* 14(1) 1988, 59-68.

Woodhall, Maureen. Designing a student loan programme for a developing country : The relevance of international experience. *Eco Edn Rev* 7(1), 1988, 153-62.

COMPARATIVE AND COUNTRY STUDIES

Moser, Claus. The Robbins Report 25 years after—and the future of the universities. *Oxford Rev Edn* 14(1), 1988, 5-20.

Neave, Guy. From a farflung field : Some considerations of Robbins from a European perspective. *Oxford Rev Edn* 14(1), 1988, 69-80.

Richter, Ingo. Selection and reform in higher education in Western Europe. *Comp Edn* 24(1), 1988, 53-60.

Scott, Peter. Blueprint or blue remembered hills ? The relevance of the Robbins report to the present reforms of higher education. *Oxford Rev Edn* 14(1), 1988, 33-48.

Simmons, Cyril and Wade, Winnie. Contrasting attitudes to education in England and Japan. *Ednl Res* 30(2), 1988, 146-52.

Trow, Martin. Comparative perspectives on higher education policy in the UK and the US (1). *Oxford Rev Edn* 14(1), 1988, 81-96.

THESES OF THE MONTH

A List of Doctoral Theses accepted by Indian Universities.

BIOLOGICAL SCIENCES

Biochemistry

1. Abraham, Annie. *Studies on cholesterol metabolism.* Kerala. Dr. P.A. Kurup, Prof and Head (Retd), Department of Biochemistry, University of Kerala, Trivandrum.

2. Basu, Subirkumar. *Biochemical studies on some aspects of mycobacteria.* Calcutta.

3. Bulusu, Saraswati. *A study on the toxicity of some pesticides under various nutritional conditions.* Calcutta.

4. Moses, Lavanya. *Calcium activated neutral protease in the blood cells of Duchanne muscular dystrophy : Its role in pathogenesis.* Osmania.

5. Pandey, Ram Awatar. *Biological stabilization of coal carbonization wastes.* Nagpur. Dr. P. Kumaran, Scientist, NEERI, Nagpur and Dr. N. M. Parhad, Department of Biochemistry, Nagpur University, Nagpur.

6. Paramjit Kaur. *Biochemical and physiological effects of feeding peroxidized oils in albino rats.* PAU.

7. Remala, Narayana Murty. *The mitogenic trigger : Role of calcium and calmodulin.* JNU. Prof. A. R. Rao.

8. Singh, Ashok Kumar. *Elucidation of actomyosin interaction on the basis of H-flux mediated electro osmosis.* JNU. Prof. M. Amin.

Microbiology

1. Dudhane, Sunil Bapuraooji. *Microbial degradation of limonin.* Nagpur. Dr. K.V. Shankhpal, Department of

Biochemistry and Microbiology, Nagpur University, Nagpur.

Marine Biology

1. Nair, Mini. *Studies on the systematics and ecology of Isopods of the South West Coast of India.* Kerala. Dr. H. Suryanarayanan, Reader, Department of Aquatic Biology and Fisheries, University of Kerala, Trivandrum.

2. Prabhudeva, K.N. *Toxicity accumulation and depuration of heavy metals in the Brown Mussel Perna Indica.* Cochin. Dr. N. Ravindranatha Menon, School of Marine Sciences, Cochin University of Science and Technology, Cochin.

Botany

1. Anil Kumar. *Studies on ecological implications of varied land use patterns in North Eastern Hill Region of India.* NEHU. Prof. P. S. Ramakrishnan, Department of Ecology, Jawaharlal Nehru University, New Delhi.

2. Deshmukh, Ramdas Gomaji. *Embryological and histochemical studies in the combretaceae.* Nagpur. Dr. K.H. Malde, Department of Botany, Nagpur University, Nagpur.

3. Dixit, Anupam. *Genetic regulation of heterocyst differentiation and nitrogen fixation in Cynabacteria, Blue Green Algae.* Avadh. Dr. P.N. Saxena, Algae Laboratory, National Botanical Research Institute, Lucknow.

4. Dixit, Arun Mani. *Studies on ecology and production of wetlands and lakes of Tarai region of North-Eastern U.P. with emphasis on their management.* Awadh. Dr. Lalman, Department of Botany, M.L.K. College, Balrampur.

5. Gupta, Swati. *Morphology, aerobiology, physiology and Chemistry of the pollen grains of some sub-tropical eastern Himalayan plants.* Calcutta.

6. Leelavathi, Sadha. *Androgenic plant production in Brassica Spp. to evolve genetic recombinants.* Calcutta.

7. Lugade, Manikrao Raghunath. *Cytological and physiological studies in colchicine yielding plants Gloriosa L. and Iphigenia kunth.* Shivaji. Dr. B.A. Hegde, Prof. and Head, Department of Botany, Shivaji University, Kolhapur.

8. Merajuddin, Mukashaf Sitara Md. *Cytogenetical studies in some species of paspalum.* Karnatak. Dr. M.S. Chennaveeraiah, Prof. (Retd) Department of Botany, Karnatak University, Dharwad.

9. Pal, Aparna. *On the pollen morphology of some members of Indian asteracea with reference to taxonomy and affinity.* Calcutta.

10. Ray, Namita. *Micromorphological studies of fruits of some members of Indian umbelliferae.* Calcutta.

11. Sakundarwar, Ravindra Shankarrao. *Investigation of plant remains from the Deccan intertrappean exposures of India.* Nagpur. Dr. N.R. Yawale, Department of Botany, Institute of Science, Nagpur.

12. Sarkar, Subhasish. *Chromosome banding technique in plant cytogenetics.* Calcutta.

13. Siva Reddy, Vanga. *Use of androgenic plant production techniques in evolving novel genetic variants in rice, Oryza sativa L.* Calcutta.

14. Tewari, Subhash Chandra. *Studies on microbial communities and their activities in soils of pineapple planta-

tions.* NEHU. Prof. R.R. Mishra and Prof. B.K. Tewari Department of Botany, North Eastern Hill University, Shillong.

15. Thakarar, N.K. *Biological flora of Rajkot.* Saurashtra. Dr. S C. Pandeya, Prof., Department of Biosciences, Saurashtra University, Rajkot.

16. Thakkar, Rajesh Kumar. *Studies on some seed borne infections of barley, Hordeum vulgare L. grown in Rajasthan.* Rajasthan. Dr. Dalbir Singh, Prof., Department of Botany, University of Rajasthan, Jaipur.

17. Thombre, Ramesh Rajaram. *Studies in physiology of leaf ontogeny in plants.* Shivaji. Dr. B.A. Karadge, Department of Botany, Shivaji University, Kolhapur.

Zoology

1. Desai, Dadasaheb Babasaheb. *Studies on the lipase activity in mice tissues in experimental uranyl nitrate intoxication.* Shivaji. Dr. V.A. Sawant, Department of Zoology, Shivaji University, Kolhapur.

2. Maitra, Debasri. *Histology and histochemistry of the blood and digestive tract of certain simuliids and culicids : Diptera.* NBU.

3. Mohammad Ishak. *Studies on experimental ascardiasis relation of the bursa and other lymphoid organs to ascaridia galli infection in chicken.* Vikram. Dr. G.N. Johri, Head, Department of Biology, Vikram University, Ujjain.

4. Nanchal, Brijesh Kumari. *Study on neurosecretory system of hieroglyphus furcifer (Orthoptera : Acrididae).* Rajasthan. Dr. B.N. Mathur, Department of Zoology, Govt. College, Ajmer.

5. Nigam, Kumud. *Studies on the effects of certain toxicants on common house sparrow, Passer domesticus.* Rajasthan. Dr. P. P. Bakre, Department of Zoology, University of Rajasthan, Jaipur.

6. Pramanik, Debakiranjan. *Studies on Aphid-Aphidiid complex of Nagaland.* Calcutta.

7. Rai, Manoj Madhaw. *In vivo investigations of Nosema locustea-microsporide protozoa for the control of locust locusta, Migratoria migratorioides and grasshopper, Hieroglyphus banian-Orthoptera.* Nagpur. Dr. S.K. Raina, Department of Zoology, Nagpur University, Nagpur.

8. Raman, K. *Some aspects of population ecology, mating behaviour and reproductive strategies of Paratelphusa hydrodromous Herbst.* Kalicut. Dr. K.J. Joseph, Prof. and Head, Department of Zoology, University of Calicut, Calicut.

9. Sen, Mitra. *Study of the biology of female reproduction in soft shelled turtle, Lissemys punctata.* Calcutta.

10. Sreenarayanan, K.V. *Some aspects of the biochemistry and physiology and reproduction in the shore crab, Ocypoda ceratophthalma (Pallas).* Calicut. Dr. K.J. Joseph, Prof. and Head, Department of Zoology, University of Calicut, Calicut.

11. Srivastava, Satish Kumar. *Implication of Calcium in Cataract formation.* Avadh. Dr. V.K. Srivastava, Department of Chemistry, Gorakhpur University, Gorakhpur.

Agriculture

1. Ananda, K.S. *Genetic variability for resistance to saline and alkali soils in some wheat and barley materials.* Kurukshetra.

2. Bhardwaj, Nathu Ram. *Studies on nitrogen requirement and planting geometry of maize based grain legume inter-cropping systems.* HP Krishi. Dr. O.P. Awasthi, Department of Agronomy and Agrometeorology, Himachal Pradesh Krishi Vishwavidyalaya, Palampur.

3. Gurdit Singh. *Studies on the effects of rates and methods of FYM application and seed rates on late sown rainfed wheat, Triticum aestivum. L.* HP Krishi. Dr. R.C. Thakur, Department of Agronomy and Agrometeorology, Himachal Pradesh Krishi Vishwavidyalaya, Palampur.

4. Krishan Chander. *Bionomics of some aphidephagous syrphid species of subtemperate region.* YS Parmar. Dr. O.P. Bhalla, Department of Entomology and Apiculture, College of Horticulture, Solan.

5. Rade, Vasant Marutrao. *A study of small farmers in Bhor Tehsil of Pune District with special reference to communication of agricultural information and adoption of agricultural innovations.* MP Agrl, Dr. P.V. Salvi, Vice-Chancellor, Marathwada Agricultural University, Parbhani.

6. Sarwan Kumar. *Studies on the effects of amendments and saline irrigation water on the reclamation of sodic soil.* Kurukshetra.

7. Sharma, Prem Nath. *Identification of viruses causing mosaic diseases in bell peppar, Capsicum annum L. in Himachal Pradesh.* YS Parmar. Dr. S.C. Chowfla, Department of Mycology and Plant Pathology, College of Horticulture, Solan.

8. Taneja, Narendra Kumar. *Studies on myrothecium leaf spot disease of cotton.* YS Parmar, Dr. P.K. Seth, Head, Department of Mycology and Plant Pathology, College of Horticulture, Solan.

9. Thimmappa, Guruswamy. *Traction studies under alluvial soil conditions of Punjab.* PAU.

10. Yadvinder Singh. *Studies on the fungal blight of sesame, Sesamum indicum L in the Punjab.* PAU.

Medical Sciences

1. Datta, Suchimita. *A study on the resistance pattern of a chromate tolerant bacterium.* Calcutta.

2. Hemavathi, R. *Purification and characterisation of ribonuclease from human milk.* Osmania.

3. Kaskhedikar, Satish Gopalrao. *Synthesis and structure activity relationships on potential biological active compounds.* Nagpur. Dr. G. Bagavant, Department of Pharmaceutical Sciences, Nagpur University, Nagpur.

4. Lakshmi, V.V. *Screening of some plant derived and synthetic compounds for inhibition of penicillinase and curing of plasmids in Escherichia coli.* Osmania.

5. Nagaraja Rao, Kamala Puram. *Leprosy—it's association with nutritional factors and few co-existing tropical infections.* Nagpur. Prof. Kunal Saha, Division of Immunology, V.P. Chest Institute, University of Delhi.

6. Palchaudhuri, Madhusnata. *Changes in interphase nucleus in cancer.* Calcutta.

7. Parui, Rabindranath. *Cerebellar participation in glucose homeostasis.* Calcutta.

8. Pathaki, Vandana, K. *Studies on dominant lethality and the immune status of mice inoculated with inactivated and live influenza X31 virus.* Osmania.

9. Ramaprasad, P. *Studies on filarial excretory and secretory antigens.* Nagpur. Dr. B.C. Harinath, M.G.I.M.S., Sewagram.

10. Saxena, Sunilkumar Ramashankerlal. *Cultivation and immunological studies in malaria.* Nagpur. Dr. G.P. Dutta, Director, Division of Microbiology, Central Drug Research Institute, Lucknow.

11. Umathe, Sudhir Kumar. *Biopharmacological studies of some animal species intoxicated with diptheria toxin.* Nagpur. Dr. D.M. Brahmakar, Department of Pharmaceutical Sciences, Nagpur University, Nagpur.

Veterinary Science

1. Dalip Lal. *Scanning alternate sources of calcium and phosphorus supplements and their availability and disappearance from rumen.* Kurukshetra.

2. Dharmpal Singh. *A comparison of some sampling procedues for progeny testing for dairy bulls.* PAU.

3. Gajbhiye, Prakash Uttamrao. *Evolving restricted indices for selection in buffaloes.* Kurukshetra.

4. Ghosh, Bikash Chandra. *Production, packaging and preservation of mozzarella cheese from buffalo milk using microbial rennet.* Kurukshetra.

5. Gulshan Kumar. *Correction factors for progeny testing of bulls having crossbred progeny.* Kurukshetra.

6. Gupta, Neelam *Purification and properties of ribonuclease from buffalo and goat milk.* Kurukshetra.

7. Naqvi, Syed Mohammed Khursheed. *Physiological adaptation of sheep during energy crisis and thermal stress.* Kurukshetra.

8. Sangawan, Ram Bhagat. *Physico-chemical studies on buffalo colostrum caseins.* Kurukshetra.

9. Sat, Le Minh. *Cytogenetic analysis of buffalo chromosomes.* Kurukshetra.

10. Seth, Raman. *Studies on the physico chemical aspects of fat globule membrane proteins of recombined buffalo milk.* Kurukshetra.

11. Sharma, Ashwani. *Studies on the cytological mutagenic and teratological effects of aflatoxins in animals.* Kurukshetra.

12. Singh, Ganga Prasad. *Studies on the effect of chemical treatment of rice husk on the chemical composition, growth and nutrition utilization in cattle.* Kurukshetra.

13. Solanky, Mukesh Jagubhai. *Certain developmental aspects of UHT processing of buffalo milk.* Kurukshetra.

14. Sujata. *Thermal physiology of buffalo neonate.* Kurukshetra.

A List of Select Articles and Editorials on Education from Newspapers received in the
AIU Library during July, 1988.

EDUCATIONAL SOCIOLOGY

Amrik Singh. "Empowerment" of women. *The Tribune*, 13 July '88.

Anzar, Qamar Jahan. The many sides of minority institutions. *The Hindu* 19 July, 1988.

Jain, S.P. Backward classes : Problems of education. *The Times of India*. 13 July, 1988.

Ramakrishnan, Jaishri. Social integration of the slow learner. *The Hindu* 26 July, 1988.

Singh, Suman. Need to define women's education. *The Pioneer* 6 July, 1988.

Sinha, Shashi Shekhar. Social environment and education system. *The Indian Nation* 10th July, 1988.

EDUCATIONAL POLICY & PLANNING

Sinha, L.S. Navodaya Vidyalayas : Wanted an alternative approach. *The Hindu* 5th July, 1988.

THE IDEA OF A UNIVERSITY (Ed.) *The Hindu* 8 July, 1988.

EDUCATIONAL ADMINISTRATION

Ambirajan, S. Whither higher education. *The Hindu*. 12 July & 13 July, 1988. (T.R. Venkatarama Sastri Memorial Lecture).

Jain, Sandhya. Autonomy for colleges : New power struggle on the campus. *The Hindustan Times*, 24 July, 1988.

Onkar Singh. University autonomy and accountability. *Patriot*, 16 July, 88.

Sadasivan, S N. Clerical power over academics. *National Herald*, 15 July, 1988.

Upadhyay, Ashok. Where is ICHR's research output ? *The Economic Times*, 5 July, 1988

EDUCATION & POLITICS

ACADEMIA IN ELECTIONS (Ed.) *Patriot* 27 July '88.

VC RUNS AMOK (Ed.) *The Indian Nation*, 28 July, 88.

CURRICULUM

MATH & AFTERMATH (Ed.) *The Times of India*, 13 July, 88.

Puri, Rakshat. Two cultures. *The Hindustan Times*, 6 July, 88.

Sarkar, Chanchal. No schools for thought *Indian Express*, 10th July, 88.

LANGUAGE & LANGUAGE POLICY

Jacob, Kuruvila. The controversial language policy. *The Hindu*, 12 July, '88.

VOCATIONAL EDUCATION

Alexander, P.C. Serious flaws in medical education. *Indian Express*, 4 July. 88.

Ninan, Sevanti. Unprepared again. *Indian Express*, 20 July, 88.

Parameswaran, M.A. Engineering courses : Time to change the statusquo. *The Hindu*. 26 July, 88.

TECHNICAL EDUCATION (Ed.) *The Hindustan Times*, 13 July, 88.

TEACHERS & TEACHING

Banamali Nath. Mehrotra Committee report : An appraisal. *The Assam Tribune*, 9 July, 1988.

Banerjee, Robin. New frontiers for colleges. *National Herald*, 24 July '88.

Jain, Sandhya. Teachers and trade unionism. *The Hindustan Times*, 3 July '88.

Jha, Nalinikant. Strategies for improving teachers' performance. *The Indian Nation*, 4 July '88.

JUSTICE TO TEACHERS (Ed). *The Indian Nation*, 24 July, '88.

MOVE AGAINST UNIONS (Ed). *The Hindustan Times*, 30 July '88.

NEW DEAL FOR TEACHERS (Ed). *National Herald*, 25 July '88.

ON TEACHERS AND PUPILS (Ed). *Patriot*, 10 July '88.

REDRESSAL IN DRIBLETS (Ed). *The Tribune*, 25 July, '88.

Shukla, Shyam N. Teaching profession and UGC grades. *The Pioneer*, 31 July, '88.

TEACHERS' PAY (Ed) *Deccan Herald*, 25 July, '88.

TEACHERS WITHOUT RIGHTS (Ed). *The Tribune*, 30 July, 1988.

EDUCATIONAL RESEARCH

Bell, Gordon C. Striving for a national research network in the U.S. *The Hindu*. 13 July, 1988.

Rajimwale, Anil. Scientific-technological bodies in national growth. *Patriot*, 9 July, '88.

Subramanya, Manju. Lab, industry interface increasing. *The Economic Times*. 10 July, '88.

EDUCATIONAL TECHNOLOGY

Amrik Singh. Education versus entertainment. *Amrita Bazar Patrika*, 13 July, '88.

————. Media imbalance. *The Hindustan Times*, 4 July, '88.

Iyengar, T.K.S. Information as an aid to progress. *The Hindu*, 2 July, '88.

EDUCATIONAL EVALUATION

ANTI-STUDENT ACT (Ed). *The Indian Nation*, 6 July, '88.

Natarajan, K.V. In search of a meaningful evaluation system. *The Hindu*, 5 July, '88.

VARSITY EXAMS. (Ed). *The Indian Nation*, 25 July, '88.

ECONOMICS OF EDUCATION

Gopalakrishnan, A.A. Pursuing higher study under NSS 1987 scheme. *The Hindu*, 22 July, '88.

Gundu Rao, N.C. Have capitation fee really gone ? *Deccan Herald*, 17 July, '88.

PHYSICAL EDUCATION & SPORTS

V. Mohan. How to produce champions. *Indian Express*, 10 July, '88.

ADULT EDUCATION

Banerjee, Argha. Literacy mission launched. *Amrita Bazar Patrika*, 5 July, '88.

Mohanty, B.B. A mission for students. *National Herald*, 22 July, '88.

RURAL EDUCATION

THE DUBIOUS SEARCH FOR NEW RECIPES (Ed). *The Hindu*, 21 July, '88.

RURAL UNIVERSITIES (Ed). *National Herald*, 21 July '88.

INSTITUTIONAL PROFILE

Sadhu, J.N. Cosy bed in seat of learning (Indian Institute of Advanced Studies). *Deccan Herald*, July 31, 1988.

Vedantam, Vatsala. A law school with a difference (National law School of India University, Bangalore). *Deccan Herald*, 16 July, '88.

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BOMBAY-400 038	HYDERABAD-500 004	MADRAS-600 002	PATNA-800 004
Commerce House,	State Archaeological	LLA Auditorium,	Bihar State
Currimbhoy Road,	Museum Building,	736, Anna Salai	Co-operative
Ballard Pier,	Public Garden,	Phone : 87143	Bank Building,
Phone : 262 800	Phone : 236393		Ashoka Rajpath,
			Phone : 53823
CALCUTTA-700 069	LUCKNOW-226 019	NEW DELHI-110 001	TRIVANDRUM-695 002
8, Esplanade East,	10-B, Station Road,	Super Bazar,	Near Govt. Press,
Phone : 238030	Phone : 34939	Connaught Circus,	Press Road,
		Phone : 3313308	Phone : 63650

davp 88/264

UNIVERSITY OF OXFORD

Rhodes Scholarships India 1989

Applications are invited from Indian nationals for three Scholarships to be awarded under the terms of the Rhodes Trust, Oxford, England, to outstanding Graduates of Indian Universities. The annual value of each Scholarship is £ 4540. The Scholarships tenable for two, and extendable to three years, are specifically for a course of study leading to a degree at the University of Oxford. Candidates must hold a first class honours degree in pure or applied science, humanities, law or medicine, and apart from academic distinction, show evidence of active interest and achievement in extra-curricular activities, including sports. They must be between the ages of 19· and 25 on October 1, 1989. Particulars of the Scholarships Scheme, together with application form, may be obtained by sending self-addressed Re. 1/- stamped envelope (5" x 10") to the Secretary, Rhodes Scholarships (India), St. Stephen's College, Delhi-110007.

GURU GHASIDAS UNIVERSITY, BILASPUR M.P.
ITI BARRACKS, KONI, BILASPUR, M.P.

Advertisement No. 4594 Estt/UTD/88   Dated : 27.7.88

Applications in the prescribed forms are invited for the following posts in the University Teaching Departments so as to reach the undersigned on or before **Five Sept., 1988.**

S. No.	Departments	Posts
1.	Deptt. of Industrial Relation (Management)	Professor in Management —One Three Lecturers. 1. Tourism. 2. Labour Walfare Industrial Relation. 3. MBA.
2.	Political Science	One Professor.
3.	Deptt. of Forestry, Wild Life & Eco. Development.	One Lecturer.
4.	Deptt. of Social Anthropology & Tribal Development.	One Professor. Two Lecturers. 1. Social Anthropology. (Reserve for SC/ST) 2. Culture.
5.	Language & Tribal Dialects.	One Reader (Linguistics) Two Lecturers. 1. English (Reserve for ST) 2. Hindi
6.	Deptt. of Commerce.	One Professor.
7.	Deptt. of Business Economics.	One Professor. One Lecturer. (Reserve for SC/ST)

(2) **PAY SCALES :**   (1) Professor — 1500-2500
                        (2) Reader — 1200-1900
                        (3) Lecturer — 700-1600
                        (Likely to be revised)

(3) **QUALIFICATION :**

A. Essential for all Posts :   As Prescribed by the University Grants Commission, New Delhi for the the Post of Prof., Reader & Lecturer.

Desirable : For Professor in Management.

He must have obtained Post Graduate Degree in Business Administration/ Management and Teaching and/or Administrative experience of atleast 10 years in the University or in reputed Organisations/Institutions.

For Lecturer in Tourism

He must have obtained Post Graduate Degree in Tourism and Teaching and/or 5 years Administrative Experience of Tourism Management.

For Lecturer in Labour Welfare Industrial Relation

He must have obtained Post Graduate Degree in Welfare & Industrial relation with at least 5 years experience in the field.

For Lecturer in MBA

He must have obtained Post Graduate Degree in the Subject concerned and/ or/must have at least 5 years experience in a reputed concern.

For Professor in Political Science

Prefrence shall be given to candidates specialization in or having experience of research and studies in the field of weaker section of society particularly tribals, Harijans and women, and in rural development.

For Lecturer in Forestry, Wild Life & Eco Development.

As per U.G.C. prescribed qualification with specialization in Environmental studies or practical experience of field of forestry.

For Professor in Social Anthropology & Tribal Development.

He Must have worked in Tribal Development field.

For Lecturer in Social Anthropology

Specialization in Social Anthropology and/or in Culture with at least 5 years experience in the field.

Language and For Reader in Language and Tribal Dialects

With Specialization in the field of Gond or Santhali etc.

For Lecturer in English

He must have Specialization in Methodology of Teaching English.

For Lecturer in Hindi

He must have Specialization in the field of Tribal Development.

For Professor & Lecturer in Business Economics

Preference shall be given to candidates specialised in or having experience

of research and studies in the field of weaker section of society particularly tribals, Harijans and women, and in rural development and/or background of Industrial relation & management.

(4) No. T.A./D.A. will be admissible to the candidate if called for interview. The Selection Committee may consider the case of an eminent/suitable person in absentia.

(5) Applicants who are in the employment Govt./Semi. Govt./Organisation/Educational Institute or of any Govt. Undertaking must send their applications through proper channel but advance copy should reach in time.

(6) Application forms can be obtained from the University Office on payment of Rs. 5/- or by making a written request by post to the Registrar accompanied by a Crossed Postal Order of Rs. 10/- drawn in favour of the Registrar, Guru Ghasidas University, Bilaspur.

(7) For items No. 1, 4, 5, 6 & 7 these candidates who have already applied in responce to advertisements dated 21.1.88 & 28/4 need not apply again.

(8) The University reserves the right not to fill up the posts.

R.C. Parmar
REGISTRAR

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PUNJABI UNIVERSITY
PATIALA

Advt. No. 22/Rect/PRO

Applications are invited for the following posts, so as to reach the Deputy Registrar (Establishment) on or before 23 8.1988.

1. **Professor** : One in the Deptt. of Sri Guru Granth Sahib Studies,

   Specialization : Desirable : (i) Specialization in Sikh Theology.
   (ii) Good knowledge of classical language i.e. Persian and/or Sanskrit.

2. **Readers** : One each in the Deptts. of Social Work, Computer Science & Applications and Directorate of Correspondence Courses in the subject of Commerce.

   Grade : Rs. 3700-125-4950-150-5700 (UGC).

Specialization for Reader in Commerce

The candidate should be capable of teaching paper of Economics related to Commerce.

3. **Lecturers** : One each in the Deptts. of Sri Guru Granth Sahib Studies, Punjabi Shabad Jor-Kosh Cell, Regional Centre Bhatinda in the subject of Punjabi, and Directorate of Correspondence Courses in the subjects of Defence Studies-cum History and Hindi.

Grade : Rs. 2200-75-2800-100-4000 (UGC)

Specializations

Sri Guru Granth Sahib Studies :

Visheeb : *Koshkari Te Anukarminka Da Tajurbaa.*
Advashak: *Guru Granth Sahib Di Bantar Te Turteeb Da Gyan, Adhyapan Ate Khoj Tefarke Nun Tarjech Ditee Javegee.*

Punjubi Shabad Jor-Kosh Cell : Minimum 3 years experience of editing and research in a Govt. Semi Govt. Institution.
Defence Studies-cum-History : M.A. in History and Defence Studies.

4. **Librarian** : One in the University Library.

Grade : Rs. 1500-60-1800-100-2000-125/2-2500 (Unrevised)

Note :

1. Candidates who had applied for the post of Reader in Computer Science and Lecturer in Defence Studies-cum-History in response to earlier advertisement need not apply again.
2. The Vice-Chancellor could also place before the Selection Committee names of suitable persons for the post of Professor.
3. It is not obligatory to call for Interview every candidate who possesses the essential qualifications.
4. The number of vacancies may change.
5. Candidates must possess working knowledge of Punjabi.
6. The Selection Committee might relax the qualifications/experience in exceptional cases.
7. Details of qualifications, specializations etc., will be supplied alongwith the application forms.

APPLICATION FORMS can be obtained from the Head of the University Publication Bureau, on payment of Rs. 5 - at the counter OR by sending IPO for Rs. 5.- in favour of the Registrar, alongwith a self-addressed envelope (25 × 10 cms.) with postage worth Rs. 5.50, superscribing on it APPLICATION FOR THE POST OF————.

REGISTRAR

ASSOCIATION OF INDIAN UNIVERSITIES

Applications from Indian citizens are invited on plain paper for temporary posts (two) of Research Assistants on a consolidated salary of Rs. 1800/- per month.

Candidates should have first or second class Master's degree in Social Sciences preferably in Economics with at least 2 Years' experience in economic and/or educational research. Candidates having Mathematics/Statistics/Economics at graduate level as optional subject will be preferred.

The applications complete in all respects should reach the Secretary, Association of Indian Universities, 16 Kotla Marg, New Delhi-110 002, within 10 days from the issue of this advertisement.

Canvassing in any form by or on behalf of a candidate will be a disqualification.

INSTITUTE OF ENGINEERING & TECHNOLOGY

SITAPUR ROAD, LUCKNOW-226 020

Advertisement No. 2/88

Applications are invited from citizens of India for the following posts at this Institute in the prescribed forms obtainable free of charge from the Deputy Registrar of the Institute on request accompained by a self-addressed stamped (Rs. 1.80) envelope (25cm / 10cm). Persons employed in Govt. Semi Govt. organisation or educational institutions should apply through proper channel. Posts carry allowances and other benefits as approved by U.P. State Government from time to time. Depending upon qualifications and experience, a higher start may be given.

S. No.	Name of the Post	No. of Post	Scale Rs.	Qualifications & Experience
1.	Workshop Superintendent.	1	Rs. 1250-2050	Graduate in Mechanical Engg. with atleast 7 years professional experience. Desirable : Experience of maintaining workshop/factory.
2.	Medical Officer	1	Rs. 850-1720	M.B.B.S. 3 years experience (P.G. will be preferred)
3.	Lecturer (Mathematics) (Leave Vacancy) upto 28.2.89 likely to be extended upto May '89.	1	Rs. 700-1600	Consistently good academic record with doctorate in appropriate field of Applied Mathematics. Experience in Engineering institutions will be preferred.
4.	Deputy Librarian	1	Rs. 690-1420	A Bachelor's degree along with a degree in Library Science with two years experience.
5.	Instructors (one each in Civil, Computer Sc., Electrical, Electronics, Mechanical Engg. Deptt.)	5	Rs. 570-1100	First class B.Sc., Diploma with five years experience in field of workshop and laboratories
6.	Foreman	2	Rs. 570-1100	First class diploma in Mechanical Engineering or equivalent with five years experience in field. of workshop.

Application on prescribed form should reach the Director, Institute of Engineering & Technology, Sitapur Road, Lucknow-226 020 by 5.00 P.M. on 28.8.1988.

Anil Kumar Saxena
DEPUTY REGISTRAR

MAULANA AZAD COLLEGE OF TECHNOLOGY

BHOPAL

(A Regional Engineering College)
Bhopal (M.P.)

Advt. No. Estt/R/2/7/88

Applications are invited for the following posts in the prescribed forms.

A. Professor Architecture and Chemistry

Scale of Pay : 1500-60-1800-100-2000-125/2-2500 (to be revised)

Age : Not below 35 years.

A(i) Essential Qualifications— Architecture

An eminent scholar with published work of high quality, actively engaged in research. Ten years of experience in teaching/research professional work. Experience of guiding research.

OR

An outstanding architect with established reputation who has made significant contribution to knowledge.

A(ii) Essential Qualifications — Chemistry

An eminent scholar with published work of high quality, actively engaged in research. Ten years experience of teaching and or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Specialisation : In any branch of Chemistry.

B. Asstt. Professor—Civil, Mechanical & Mathematics

Scale of Pay : 1200-50-1300-60-1900-(to be revised)

Age : Not below 30 years.

B(i) Essential Qualifications for Civil & Mechanical Engg.

Good academic record with a Doctor's degree in relevant field. About five years experience of teaching and or research and development.

Candidates not possessing Ph.D. may be considered, if they have to their credit equivalent research published work or design/development work of a high order either in the institution or in an industry.

OR

In case of persons to be recruited from industry or professional fields, candidate should possess good academic record with recognised professional work of about seven years which should include innovation and/or research and development.

Specialisation

For Civil Engineering : Hydraulics and Fluid Mechanics/Building Science & Technology/Structural Engineering Applied Geology/Transportation Engineering/Surveying.

For Mechanical Engineering : Machine Design/Vibration/Tribology/Head Power / Production / Industrial Engineering/Fracture Mechanics/Operation Research.

B(ii) Essential Qualifications for Mathematics

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials. About five years experience of teaching and/or research provided that atleast three of these years were as Lecturer or in a equivalent position. This condition may be relaxed in the case of candidates with outstanding research work.

Specialisation

Elasticity including thermo elasticity or *Numerical analysis and statistics or* special functions and Computer Programming, Fourier series, Hydrodynamics and Magneto Hydrodynamics.

C. Lecturer Mathematics

Scale of Pay : 700-40-1100-50-1600 (to be revised)

Age : Not below 22 years.

Essential Qualifications

(i) A doctorate degree or research work of an equally high standard; and

(ii) Good academic record with atleast second Class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from foreign University.

Having regard to the need for developing *inter disciplinary programmes,* the degree in (i) and (ii) above may be in Mathematics.

Provided that if the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (ii) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record (weightage being given to M.Phil/or equivalent degree or research work of quality) may be appointed provided he has done research work, for atleast two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Desirable : Knowledge of Numerical Analysis, Computer Programming, and Operational research.

General Instructions

1. Age relaxable in case of exceptionally outstanding candidates.

2. (a) Candidates serving in the Government/Semi-Govt., Autonomous organisations should apply through proper channel or they should produce 'No Objection Certificate' from the employer at the time of interview, if *called.*

   (b) Those who had applied on prescribed application form and through proper channel in response to advertisement No. Estt R 1 June 86 (For the posts of Prof. Chemistry/Asstt. Prof. Mathematics/Lecturer Mathematics) may send their applications on plain paper mentioning further achievements, if any.

3. Higher initial pay may be considered in deserving cases.

4. The benefit of CPF-cum-Gratuity is admissible according to College rules.

5. The Scheme for CPF-cum-Pension-cum-Gratuity is likely to be implemented.

6. Adequate number of seats are reserved for SC/ST candidates. Other things being equal preference will be given to candidates belonging to SC/ST.

7. Application form can be had from the Registrar, Maulana Azad College of Technology, Bhopal-462 007 on requisition accompanied by self-addressed and Rs. 2.20 paise stamped envelope 25 × 10 cm size giving on the top of the cover name of the post and advertisement number Estt/R/2/July, 1988.

8. Completed applications should reach the Registrar at the above address on or before 16th August, 1988. Incomplete/late applications and those without registration fee of Rs. 7.50 in the form of Crossed Indian Postal Order may not be considered.

Further details will be made available in the instructions sheet attached with the prescribed application form.

REGISTRAR

KUMAUN UNIVERSITY
NAINITAL

Advertisement No. Affl. 736

Dated : July 21, 1988

Applications for one regular post of Lecturer Physics in the scale of pay Rs. 2200-4000 are invited by 25 August, 1988 on prescribed form obtainable from the office of the Registrar, Kumaun University Nainital-263 001 (U.P.) by sending a self-addressed 9"×6" envelope and crossed Postal Order/Bank Draft for Rs. 15/- payable to Finance Officer, Kumaun University, Nainital. Money Orders are not acceptable.

QUALIFICATION

(a) a doctorate degree or research work of an equally high standard in relevant subject,

(b) consistently good academic record with first or high second class master's degree or an equivalent degree of a foreign University in relevant subject.

Note : Candidates who have already applied in response to our advertisement No. 1782 dated 2.2.88 need not apply again, however they may send the latest addition to their qualifications, changes of address etc., if any.

Further details regarding qualifications, service terms and permissible relaxations in qualifications, will be provided with application form. Preference will be given to SC/ST, disabled candidates if otherwise considered suitable by the Selection Committee. Application form will not be sent by post after 20.8.1988 and application on plain papers and received after due date are not acceptable.

R.C. Pant
REGISTRAR